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Taxonomy & Inventories

Contributions to the *Andrena* (Hymenoptera, Andrenidae) Fauna of the Mediterranean Region of Türkiye

Kerem Kaleli‡, Fatih Dikmen§, Thomas James Wood|, Çiğdem Özenirler¶, Ahmet Murat Aytekin¶

‡ Istanbul University, Institute of Graduate Studies in Sciences, Istanbul, Türkiye
§ Istanbul University, Faculty of Science, Department of Biology, Istanbul, Türkiye
| Naturalis Biodiversity Center, Darwinweg 2, 2333 CR, Leiden, Netherlands
¶ Applied Biological Sciences Research Laboratory (ABS-Lab), Department of Biology, Faculty of Science, Hacettepe University, Ankara, Türkiye

Corresponding author: Thomas James Wood (thomas.wood@naturalis.nl)

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Abstract

Background

Andrena is one of the most diverse bee genera in the Holarctic Region, yet its species diversity and distribution in Türkiye remain poorly documented. This study provides an updated faunistic assessment of the genus in the Mediterranean Region of southern Türkiye, based on extensive field sampling in 12 provinces between 2008 and 2009 and a comprehensive synthesis of existing records. Specimens were identified using the latest taxonomic revisions and provincial distributions were compiled to produce a contemporary regional baseline.

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New information

A total of 81 species were documented, belonging to 26 subgenera, including three endemic Turkish taxa (*A. hungarica* ssp. *macroura*, *A. purpureomicans* and *A. cinnamonea*), as well as *A. wolfi*, which was recorded in the country for the first time. Floral visitation data were also incorporated into the study. Furthermore, the species distribution was summarised with regional maps. The photos of morphological characters of regional and Turkish new records were also taken and included to the study. Together, these results provide the most current and comprehensive overview of *Andrena* diversity in southern Türkiye, offering a critical foundation for future research into the taxonomy, biogeography, pollination ecology and conservation of Mediterranean bee communities.

Keywords

Andrena, bee diversity, Mediterranean Region, pollinator-plant interactions, new records, taxonomy

Introduction

The order Hymenoptera, which contains over 150,000 identified species, is considered the fourth largest order within the class Insecta (Michener 2007, Mayhew 2007, Huber 2009). However, some studies suggest that this order may harbour a much greater number of species than previously thought, potentially making it the most species-diverse order (Forbes et al. 2018). Within this order, the group Anthophila, which belongs to the Apoidea superfamily, constitute the 'true bees', with approximately 21,000 known species (Gullan and Cranston 2010, Potts et al. 2016, Ascher and Pickering 2025). As bees are considered as being the primary pollinators for nearly 300,000 species of flowering plants (Angiospermae), this ecological service is indispensable for both the continuity of natural ecosystems and for global agricultural production (Ollerton et al. 2011, Güler 2011). Due to this multifaceted ecological and economic importance, bees continue to be one of the focal points for biodiversity and conservation studies (Michez et al. 2019).

It is estimated that bees (Anthophila) in Türkiye are represented by approximately 1,750 and possibly as many as 2,000 species with more than 75 genera (Özbek 2003, Hazır 2010, Dikmen 2018, Lhomme et al. 2020, Ascher and Pickering 2025). Although this figure shows how important a biodiversity centre Türkiye is for bees, our knowledge regarding the current status, precise distribution areas and population dynamics of these species is still incomplete nationwide (Güler 2011, Hazır et al. 2014, Dikmen 2018). One of the most common genus of bees in Türkiye is *Andrena* Fabricius, 1775 (Apoidea, Andrenidae) with 392 species reported (Wood 2023a, Wood 2024, Wood 2025, TJW unpublished data). This genus is the second richest globally, after *Lasioglossum* Curtis, 1833 (Apoidea, Halictidae), with around 1,738 species following recent revisions (Pisanty et al. 2022, Wood and Monfared 2022, Wood 2023a, Wood et al. 2024, Wood 2025,

Ascher and Pickering 2025). However, this total is constantly growing due to ongoing active taxonomic revisions. This remarkable diversity is concentrated in the temperate and arid zones of the Holarctic Region, particularly within the Mediterranean Basin. Türkiye's unique position as a bridge between continents, coupled with its varied topography and climate, makes it a significant hotspot for *Andrena* diversity (Hazır 2010, Wood 2023a). While pioneering researchers, such as Warncke (1965), Warncke (1967), Warncke (1975) and Özbek (1976), conducted foundational research that revealed the diversity of the genus in the country and established a strong baseline, comprehensive faunistic studies on the *Andrena* of Türkiye have remained limited since then (Scheuchl and Hazır 2012, Hazır et al. 2012, Hazır et al. 2014, Wood 2023a). Recent taxonomic interest in the region has revitalised research and the known diversity is once again expanding. A steady stream of studies is adding new species and country records to Turkish fauna, indicating that the actual number of species is likely to be much higher than previously reported (Wood 2021a, Pisanty et al. 2022, Wood 2023a, Wood 2024, Wood 2025).

Given the importance of these taxa and the existing knowledge gaps, this study aims to: (1) provide an up-to-date checklist for the region; (2) present preliminary distributional data for the species and (3) report new records and endemic species for the region, focusing on *Andrena* species in the Mediterranean Region of Türkiye, an area renowned for its rich biodiversity. Ultimately, we hope that this work will contribute to future research on the taxonomy, ecology and conservation on the genus *Andrena* of Türkiye.

Materials and methods

Field studies

This study was conducted within the Mediterranean Region of southern Türkiye. The study area encompassed twelve provinces representing the core distribution of the Mediterranean Basin in the country. Amongst these, eight provinces are entirely located within the Mediterranean Region (Adana, Antalya, Burdur, Hatay, Isparta, Mersin, Muğla and Osmaniye), whereas four provinces are only partly situated within the region (Denizli, Karaman, Kahramanmaraş and Niğde).

Field studies were conducted during the spring and summer seasons of 2008 and 2009. As the survey area covered more than 100,000 km², an opportunistic sampling protocol was employed to maximise the number of specimens collected. All bees were captured using hand nets and aspirators and floral resources visited by them were either recorded in the field or collected for subsequent identification. Bees were examined and photographed by Zeiss Discovery V8 stereoscopic microscope. Identification of the bee specimens was made by T. Wood. The species and their authorities are listed below in alphabetical order within subgenera (Table 1). The distribution of the species was compiled, based on a literature review and listed in alphabetical order. Identification of plant specimens were made by D. Töre according to Flora of Turkey and East Aegean Islands (Davis 1965, Davis 1988, Güner et al. 2000).

Spatial data visualisation

The map of Türkiye (Fig. 1) displaying the Mediterranean Region and the sampled provinces was generated in R Studio (version 2025.05.1+513 or latest available; Posit team (2025)). The spatial extent was restricted to 27–37°E longitude and 35.5–38.5°N latitude to highlight the study area. Provincial boundaries were retrieved from publicly available shapefiles and the provinces were coloured according to the collected specimens. This visualisation was produced to facilitate geographic representation of the study area and to contextualise the distribution of the recorded *Andrena* species.

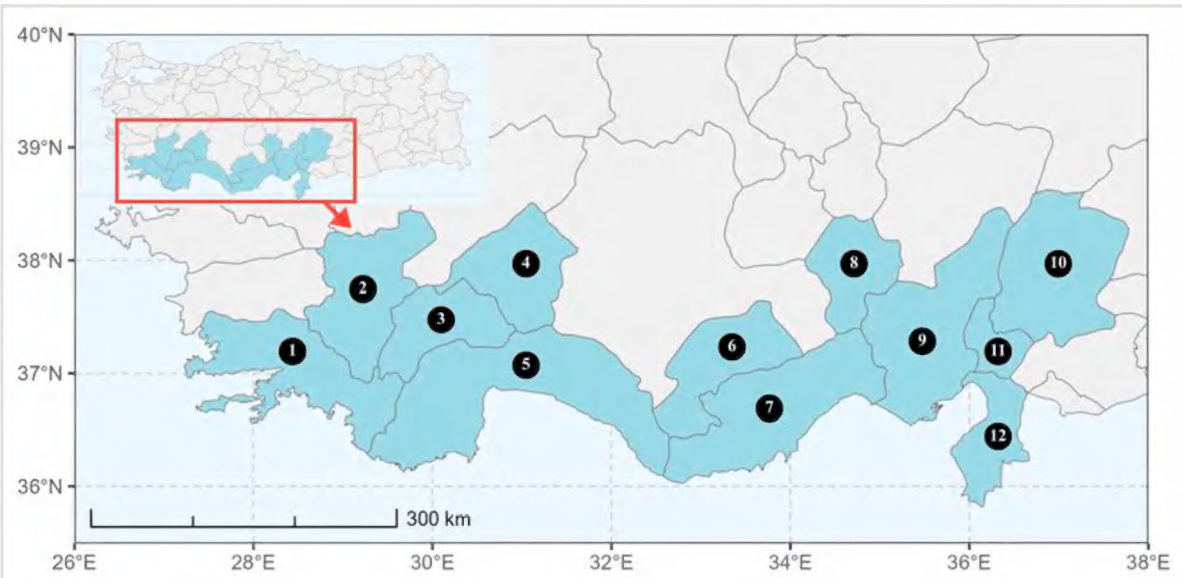

Figure 1. doi

Study area in the Mediterranean Region of Türkiye, showing sampled provinces in blue. **1** Muğla; **2** Denizli; **3** Burdur; **4** Isparta; **5** Antalya; **6** Karaman; **7** Mersin; **8** Niğde; **9** Adana; **10** Kahramanmaraş; **11** Osmaniye; **12** Hatay.

Specimen records were categorised into three data sources: literature records (L), collection-based records (C) and combined literature plus collection records (LC). For analytical purposes, both *L* and *LC* were treated as literature-based records, whereas species represented solely by *C* (i.e. present in the collection, but absent from the literature) were considered as new records (Table 2). Provinces were subsequently mapped according to these record categories, enabling comparison between previously known and newly-documented distributions. Taxonomic updates followed the most recent revisions of the *Andrena* fauna of the Palaearctic Region (see previous citations).

Data resources

The data underpinning the analysis reported in this paper are deposited at GBIF, the Global Biodiversity Information Facility, https://ipt.pensoft.net/resource?r=andrena_med_tr

Taxon treatments

Andrena (*Ulandrena*) *abbreviata* Dours, 1873

Materials

a. countryCode: TR; stateProvince: Antalya; county: Akseki; locality: Akseki road; verbatimElevation: 1262 m; verbatimLatitude: 37.118; verbatimLongitude: 31.778; eventDate: 09-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 74954092-D803-5024-8830-2C6F9B0DCC0D

b. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.108; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: B1FB5C84-10C4-5489-9D70-5D525250B7E8

c. countryCode: TR; stateProvince: Afyon; county: Dazkırı; locality: Örtülü; verbatimElevation: 1192 m; verbatimLatitude: 37.899; verbatimLongitude: 29.754; eventDate: 12-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: F45DF9C8-8EA7-5C5F-ACD6-1A2FB8106403

Distribution

Albania, Bulgaria, Georgia, Greece, Iran, North Macedonia, Israel and the West Bank, Jordan, Lebanon, Syria and Türkiye (Wood 2024).

Distribution in Türkiye: Antalya, Mersin (Warncke 1974); Adana, Adıyaman, Ağrı, Denizli, Erzurum, Eskişehir, Gaziantep, Konya, Kütahya, Malatya, Van (Wood 2024); Afyon, Antalya, Mersin (this study) (Fig. 2).

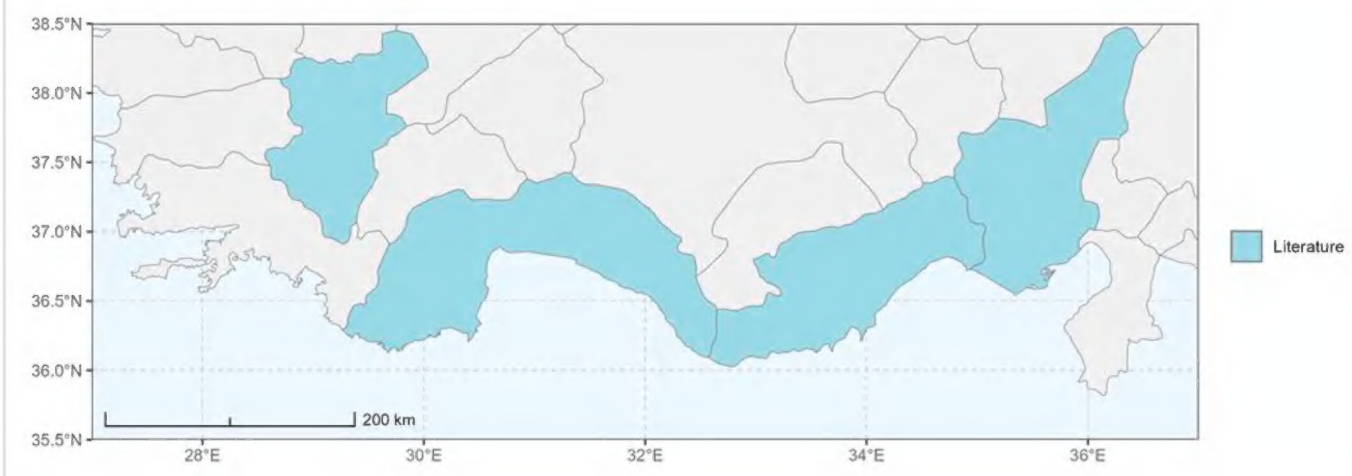

Figure 2. doi

Distribution of *A. abbreviata* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Brassica napus* L. (Khodarahmi Ghahnavieh and Monfared 2019); **Asteraceae**: *Anthemis pseudocotula* Boiss., *Cota coelopoda* var. *coelopoda* (Boiss.) Boiss., *Anthemis coelopoda* var. *bourgaei* Boiss.

Andrena (*Notandrena*) *aerinifrons* Dours, 1873

Materials

a. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 12120632-01B3-59AA-9BDB-A6DA373843D5

b. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: B0CDCEC4-9B84-5B1E-AF7C-969D05FB7B00

c. countryCode: TR; stateProvince: Hatay; county: Antakya; locality: Reyhanlı; verbatimElevation: 85 m; verbatimLatitude: 36.253; verbatimLongitude: 36.52; eventDate: 21-03-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 9CC1D763-380C-55CE-8A6A-E0846D7435F1

d. countryCode: TR; stateProvince: Hatay; county: Kırıkhan; locality: Reyhanlı; verbatimElevation: 85 m; verbatimLatitude: 36.509; verbatimLongitude: 36.418; eventDate: 21-03-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 1E24B2E3-2320-5C0A-9EAE-113F8BF02D53

Distribution

Algeria, Egypt, Iran, Iraq, Israel and the West Bank, Italy, Jordan, Libya, Morocco, Portugal, Spain, Syria, Tunisia and Türkiye (Gusenleitner and Schwarz 2002, Wood and Monfared 2022).

Distribution in Türkiye: Şanlıurfa (Warncke 1974); Kilis (Schönitzer 1997); Hatay (this study) (Fig. 3and Fig. 4A-C).

Flower records

Brassicaceae: *Eruca vesicaria* (L.) Cav., *Ochthodium aegyptiacum* (L.) DC., *Sisymbrium* L.

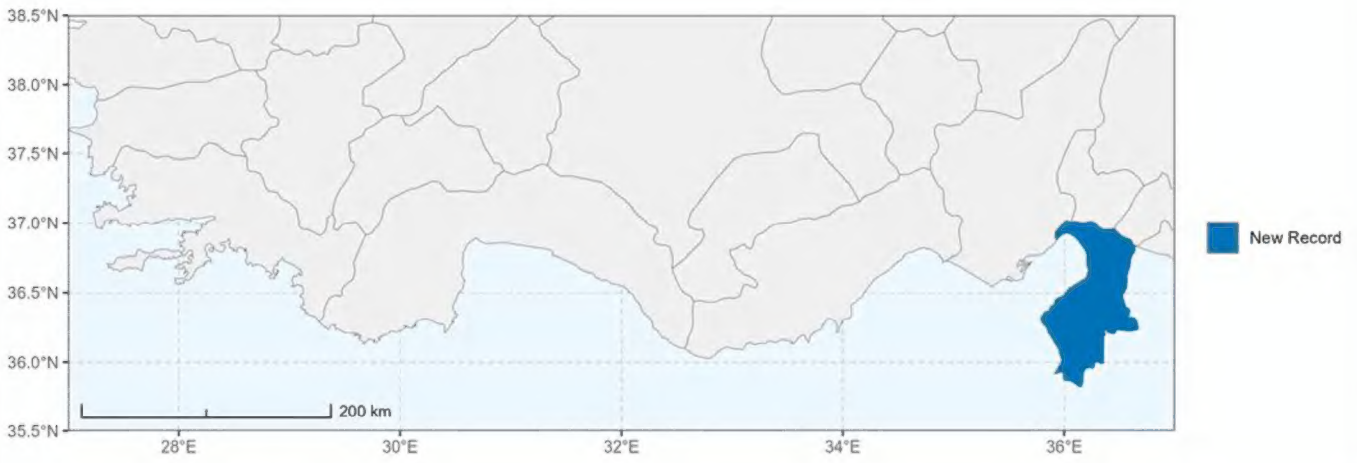

Figure 3. doi

Distribution of *A. aerinifrons* in the Mediterranean Region of Türkiye.

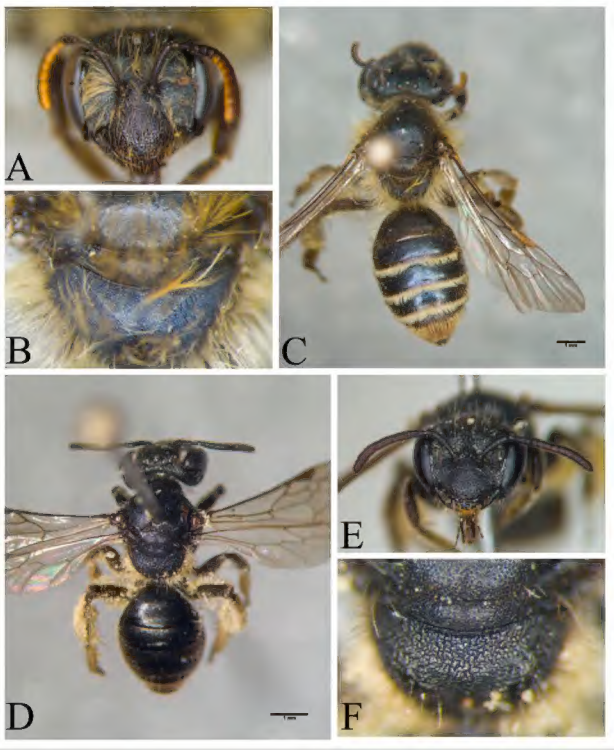

Figure 4. doi

Andrena aerinifrons, female. Head, frontal view (A); propodeum, dorsal view (B); Habitus, dorsal view (C). *Andrena alfkenella*, female. Habitus, dorsal view (D), head, frontal view (E), propodeum, dorsal view (F).

Andrena (*Micrandrena*) *alfkenella* Perkins, 1914

Material

a. countryCode: TR; stateProvince: Hatay; locality: Belen-Radar road; verbatimElevation: 1124 m; verbatimLatitude: 36.519; verbatimLongitude: 36.243; eventDate: 30-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 41B3D84E-42F3-5E05-A9D4-9E2320FE426C

Distribution

Albania, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Denmark, France, Georgia, Germany, Great Britain, Greece, Hungary, Iran, Italy, Latvia, Lithuania, Luxembourg, Moldova, Morocco, Netherlands, North Macedonia, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood et al. 2020, Wood 2024, Ascher and Pickering 2025).

Distribution in Türkiye: Erzurum, Diyarbakır (Warncke 1974); Adana (Dardón et al. 2014); Hatay (this study) (Fig. 5 and Fig. 4D-F).

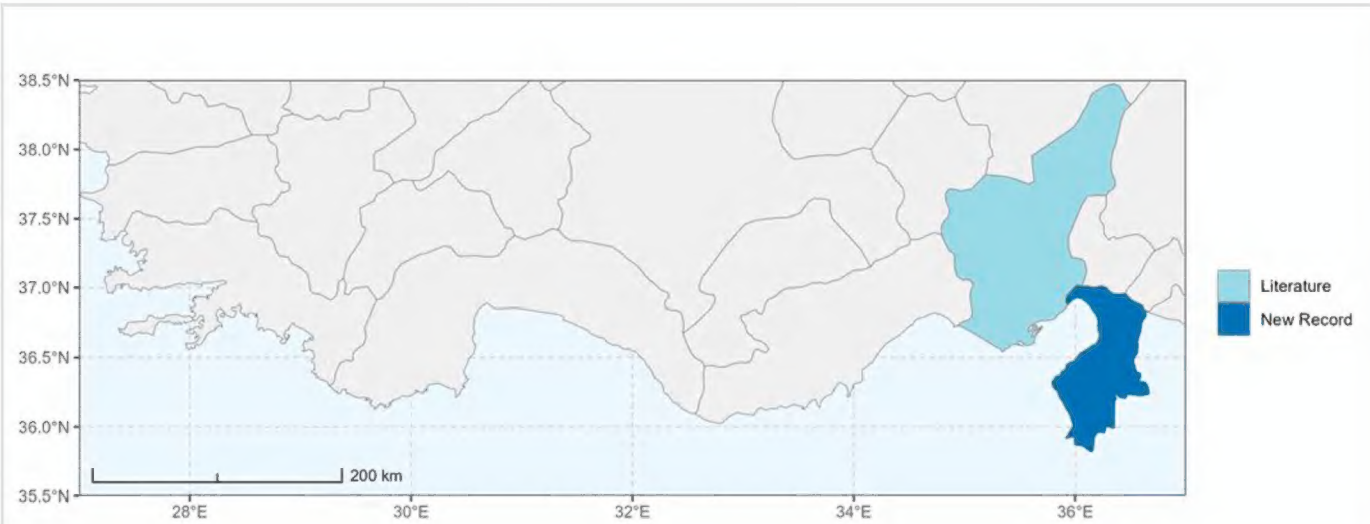

Figure 5. doi

Distribution of *A. alfkenella* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Daucus carota* L., *Heracleum sphondylium* L. (Balfour et al. 2022); **Apiaceae**: *Aegopodium podagraria* L., *Carum carvi* L., *Chaerophyllum bulbosum* L., *Daucus carota* L., *Ferula tingitana* L., *Heracleum sphondylium* L., *Pimpinella saxifraga* L., *Torilis arvensis* (Huds.) Link **Asteraceae**: *Achillea millefolium* L., *Erigeron annuus* (L.) Desf., *Matricaria chamomilla* L., *Tripleurospermum maritimum* (L.) W.D.J.Koch **Brassicaceae**: *Hirschfeldia incana* (L.) Lagr.-Foss., *Rorippa amphibia* (L.) Besser, *Rorippa sylvestris* (L.) Besser, *Sisymbrium loeselii* L. **Caryophyllaceae**: *Stellaria graminea* L. **Crassulaceae**: *Sedum acre* L. **Fabaceae**: *Lotus corniculatus* L., *Medicago lupulina* L. **Geraniaceae**: *Geranium pyrenaicum* Burm.f. **Lamiaceae**: *Thymus* L. **Ranunculaceae**: *Ranunculus paludosus* Poir., *Ranunculus polyanthemos* L. **Rosaceae**: *Potentilla reptans* L. **Rubiaceae**: *Galium lucidum* All. (Lanuza et al. 2025); **Rosaceae**: *Rubus canescens* var. *glabratus* (Godr.) Davis & Meikle.

Andrena (*Micrandrena*) *alfkenelloides* Warncke, 1965

Material

a. countryCode: TR; stateProvince: Osmaniye; locality: Karatepe National Park; verbatimElevation: 325 m; verbatimLatitude: 37.26; verbatimLongitude: 36.219; eventDate: 20-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: DDB26D2C-B27E-5419-A2DC-D9CA48057737

Distribution

Bulgaria, Cyprus, Greece, Israel and the West Bank, Iran, Jordan, Lebanon, Syria and Türkiye (Gusenleitner and Schwarz 2002, Wood et al. 2020).

Distribution in Türkiye: Ankara, Manisa, Nevşehir (Ürgüp), Denizli, Antalya, Mersin, Niğde, Tunceli, Adana, Osmaniye, Hatay (Warncke 1974); Aydın, Burdur, Mersin (Hazır et al. 2014); Osmaniye (this study) (Fig. 6).

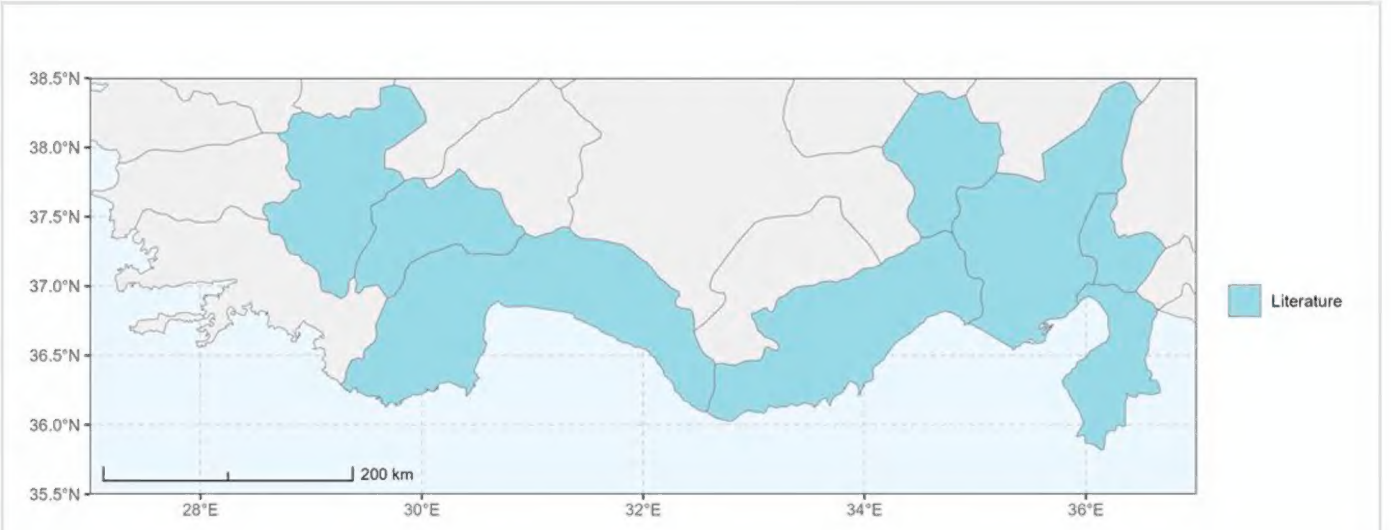

Figure 6. doi

Distribution of *A. alfkenelloides* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Anthemis chia* L., *Crepis commutata* (Spreng.) Greuter **Apiaceae**: *Pimpinella cretica* Poir., *Pimpinella peregrina* L. (Lanuza et al. 2025); **Asteraceae**: *Senecio vernalis* Waldst. & Kit.

Andrena (*Micrandrena*) *alutacea* Stöckhert, 1942

Material

a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.354; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen;

identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 2750D662-8609-55D3-A4CD-FC19ECCEAE92

Distribution

Austria, Azerbaijan, Bulgaria, Crimea, Croatia, Georgia, Germany, Greece, Iran, Italy, Latvia, Montenegro, North Macedonia, Poland, Romania, Russia, Switzerland, Turkmenistan, Türkiye and Ukraine (Schmid-Egger 2005, Proshchalykin et al. 2017, Wood and Monfared 2022).

Distribution in Türkiye: Ağrı, Amasya, Erzurum, Hakkari, Kars, Konya, Mersin, Muş, Nevşehir, Sivas (Schmid-Egger 2005); Ankara, Aydın, Çankırı, Konya, Kütahya (Hazır et al. 2014); Mersin (this study) (Fig. 7).

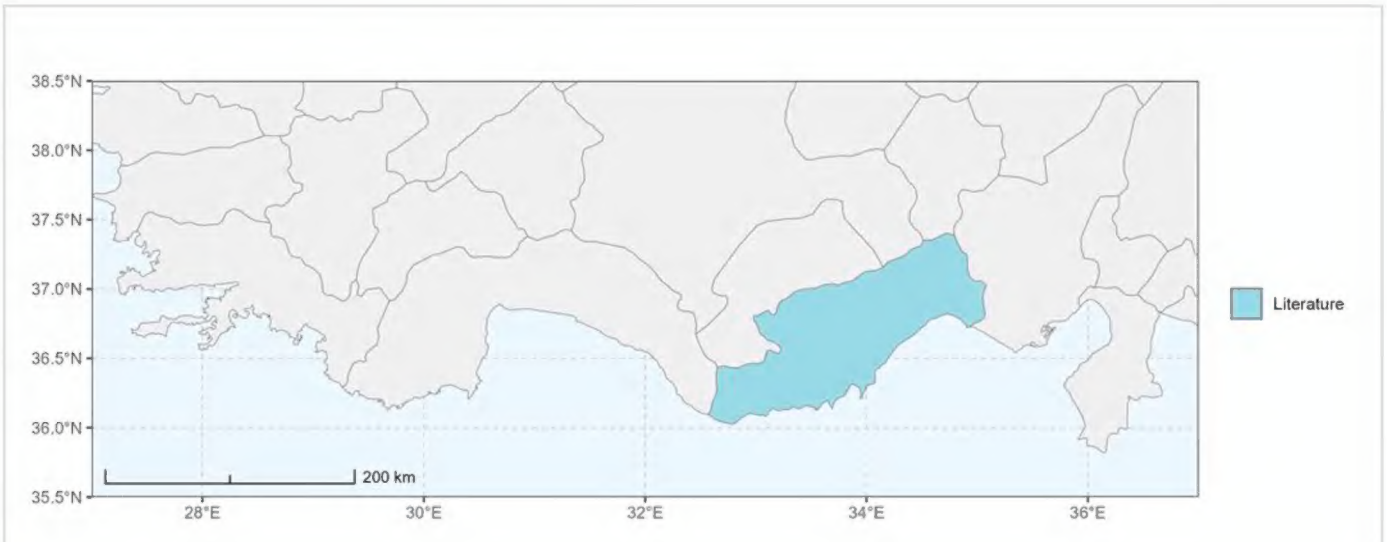

Figure 7. doi

Distribution of *A. alutacea* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Prangos uechtritzii* Boiss. & Hausskn

Andrena (*Chlorandrena*) *astica* Warncke, 1967

Materials

a. countryCode: TR; stateProvince: Adana; locality: Çukurova University; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 20-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 4C57582C-1356-5330-9FBA-1621AEBCAB7B

b. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 2; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 30EC40D8-F5BC-5DBE-B1A2-C77C71CB53E4

Distribution

Cyprus, Georgia, Greece, Iran, Iraq, Israel and West Bank, Lebanon and Türkiye (Schwenninger 2015, Wood 2021b, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Balıkesir, Adana (Warncke 1974); Maraş (Hazır 2010, Hazır et al. 2014); Adana, Hatay (this study) (Fig. 8).

Figure 8. doi

Distribution of *A. astica* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Crepis sancta* (L.) Bornm. **Brassicaceae**: *Sisymbrium* L.

Andrena (*Euandrena*) *bicolor* Fabricius, 1775

Material

a. countryCode: TR; stateProvince: Hatay; locality: Yayladağ; verbatimElevation: 423 m; verbatimLatitude: 35.908; verbatimLongitude: 36.078; eventDate: 22-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 326EA524-F698-5679-A36F-377F663D0313

Distribution

Algeria, Albania, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Iran, Ireland, Italy, Latvia, Lithuania, Luxembourg, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Tunisia, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2008, Wood and Monfared 2022).

Distribution in Türkiye: Amasya, Ankara, Antalya, Ardahan, Balıkesir, Bursa, Diyarbakır, Erzurum, Kayseri, Konya, Nevşehir (Ürgüp), Tekirdağ (Warncke 1974); Ankara, Aydın, Bursa, Kırklareli, Sivas (Hazır 2010, Hazır et al. 2014); Hatay (this study) (Fig. 9).

Figure 9. doi

Distribution of *A. bicolor* in the Mediterranean Region of Türkiye.

Flower records

Amaryllidaceae: *Narcissus* L. **Apiaceae**: *Anthriscus sylvestris* (L.) Hoffm., *Daucus carota* L., *Daucus* L., *Erodium* L'Hér., *Heracleum sphondylium* L., *Oenanthe crocata* L. **Araliaceae**: *Hedera* L. **Asparagaceae**: *Hyacinthoides non-scripta* (L.) Chouard ex Rothm. **Asteraceae**: *Anthemis* L., *Bellis perennis* L., *Centaurea nigra* L., *Cirsium arvense* (L.) Scop., *Cirsium* Mill., *Crepis capillaris* (L.) Wallr., *Crepis* L., *Hieracium* L., *Hypochaeris radicata* L., *Lapsana communis* L., *Leontodon* L., *Leucanthemum vulgare* Lam., *Matricaria chamomilla* L., *Picris hieracioides* L., *Picris* L., *Scorzoneroides autumnalis* (L.) Moench, *Senecio jacobaea* L., *Sonchus arvensis* L., *Sonchus* L., *Taraxacum* agg. F.H.Wigg., *Taraxacum officinale* agg. F.H.Wigg., *Taraxacum* F.H.Wigg., *Tripleurospermum inodorum* (L.) Sch.Bip. **Brassicaceae**: *Arabis* L., *Brassica napus* L., *Brassica* L., *Cakile maritima* Scop., *Capsella bursa-pastoris* (L.) Medik., *Sinapis alba* L., *Sinapis arvensis* L., *Sisymbrium officinale* (L.) Scop. **Campanulaceae**: *Campanula portenschlagiana* Schult., *Campanula rotundifolia* L., *Campanula* L., *Campanula trachelium* L. **Caprifoliaceae**: *Symphoricarpos albus* (L.) S.F.Blake, *Valerianella* Mill. **Caryophyllaceae**: *Stellaria* L., **Convolvulaceae**: *Convolvulus arvensis* L. **Cornaceae**: *Cornus alba* L. **Cucurbitaceae**: *Bryonia dioica* Bojer **Fabaceae**: *Lotus corniculatus* L., *Medicago lupulina* L., *Trifolium campestre* Schreb., *Trifolium hybridum* L., *Trifolium pratense* L., *Trifolium repens* L., *Trifolium* Tourn. ex L., *Ulex* L. **Geraniaceae**: *Geranium pyrenaicum* Burm.f., *Geranium robertianum* L., *Geranium* Tourn. ex L. **Lamiaceae**: *Lamium album* L., *Mentha aquatica* L. **Malvaceae**: *Tilia cordata* Mill., *Tilia* L. **Plantaginaceae**: *Veronica chamaedrys* L., *Veronica persica* Poir., *Veronica* L. **Polemoniaceae**: *Phlox* L. **Primulaceae**: *Primula elatior* (L.) Hill, *Primula* L., *Primula*

vulgaris Huds. **Ranunculaceae**: *Clematis vitalba* L., *Ranunculus ficaria* L., *Ranunculus repens* L., *Ranunculus* L. **Rosaceae**: *Crataegus monogyna* Jacq., *Filipendula ulmaria* (L.) Maxim., *Fragaria* L., *Potentilla erecta* (L.) Raeusch., *Potentilla reptans* L., *Potentilla* L., *Potentilla sterilis* (L.) Garcke, *Rosa arvensis* Huds., *Rosa* L., *Rubus fruticosus* agg. L., *Rubus* L. **Rubiaceae**: *Sherardia arvensis* L. **Salicaceae**: *Salix* L. **Sapindaceae**: *Acer* L. **Viburnaceae**: *Viburnum* L. (Balfour et al. 2022); **Apiaceae**: *Falcaria vulgaris* Bernh., *Heracleum sphondylium* L., *Pimpinella saxifraga* L. **Asteraceae**: *Hieracium* L., *Leontodon hispidus* L., *Leontodon saxatilis* Lam., *Taraxacum* F.H.Wigg., *Taraxacum officinale* F.H.Wigg. **Boraginaceae**: *Pentaglottis sempervirens* (L.) Tausch ex L.H.Bailey **Brassicaceae**: *Brassica napus* L. **Campanulaceae**: *Campanula bononiensis* L., *Campanula patula* L., *Campanula portenschlagiana* Schult., *Campanula rapunculoides* L., *Campanula rotundifolia* L. **Convolvulaceae**: *Convolvulus arvensis* L. **Cucurbitaceae**: *Bryonia cretica* L. **Fabaceae**: *Medicago lupulina* L., *Melilotus officinalis* (L.) Lam., *Vicia sepium* L. **Geraniaceae**: *Geranium* Tourn. ex L., *Geranium dissectum* L., *Geranium pyrenaicum* Burm.f., *Geranium sanguineum* L. **Lamiaceae**: *Thymus pulegioides* L. **Linaceae**: *Linum austriacum* L., *Linum tenuifolium* L. **Malvaceae**: *Malva sylvestris* L. **Orobanchaceae**: *Orobanche gracilis* Sm. **Primulaceae**: *Primula veris* L. **Rosaceae**: *Rubus* L. (Lanuza et al. 2025); **Asteraceae**: *Senecio vernalis* Waldst. & Kit.

Andrena (*Plastandrena*) *bimaculata* (Kirby, 1802)

Material

a. countryCode: TR; stateProvince: Hatay; locality: between Yayladağ and Samandağ; verbatimElevation: 520 m; verbatimLatitude: 35.949; verbatimLongitude: 36.052; eventDate: 22-03-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 85EE365A-208A-5645-88F0-CD67130CB702

Distribution

Algeria, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Denmark, Estonia, Finland, France, Georgia, Germany, Great Britain, Greece, Hungary, Iran, Ireland, Israel and the West Bank, Italy, Jordan, Latvia, Lebanon, Lithuania, Luxembourg, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Syria, Tunisia, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood et al. 2024, Ascher and Pickering 2025).

Distribution in Türkiye: Adana, Balıkesir (Ayvalık), Malatya, Sakarya (Adapazarı) (Warncke 1974); Ankara, Aydın, Kastamonu, Kayseri (Hazır 2010, Hazır et al. 2014); Hatay (this study) (Fig. 10).

Figure 10. doi

Distribution of *A. bimaculata* in the Mediterranean Region of Türkiye.

Flower records

Amaryllidaceae: *Allium* L. **Apiaceae**: *Heracleum sphondylium* L. **Asteraceae**: *Cirsium* Mill., *Senecio jacobaea* L. **Brassicaceae**: *Cakile maritima* Scop., *Sisymbrium* L. **Ericaceae**: *Erica* Tourn. ex L. **Fagaceae**: *Castanea sativa* Mill. **Polygonaceae**: *Rumex* L. **Rosaceae**: *Crataegus monogyna* Jacq., *Filipendula ulmaria* (L.) Maxim., *Fragaria* L., *Prunus* L., *Rubus fruticosus* agg. L., *Rubus* L. **Salicaceae**: *Salix* L., *Salix triandra* L. (Balfour et al. 2022); **Fabaceae**: *Lotus corniculatus* L., *Trifolium repens* L. **Rosaceae**: *Rosa* L. (Lanuza et al. 2025); **Asteraceae**: *Crepis sancta* (L.) Bornm.

Andrena (*Aenandrena*) *bisulcata* Morawitz, 1877

Materials

a. countryCode: TR; stateProvince: Mersin; locality: Mersin-Adana highway; verbatimElevation: 189 m; verbatimLatitude: 36.937; verbatimLongitude: 34.799; eventDate: 22-05-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: CD58061B-25A6-5F07-9788-DA2980F5E3B0

b. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: B96ED88C-8101-53F6-8784-0FA5E104FDA8

Distribution

Austria, Azerbaijan, Bulgaria, Greece, Hungary, Israel and the West Bank, Italy, Iran, Moldova, Poland, Romania, Russia, Slovakia, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood et al. 2020, Wood and Monfared 2022).

Distribution in Türkiye: Adana (Ceyhan), Balıkesir (Ayvalık), Çanakkale, Diyarbakır, Edirne, Hatay (Antakya, İskenderun), Mersin (Tarsus), Samsun (Vezirköprü), Sakarya (Adapazarı), Tekirdağ, Urfa (Warncke 1974); Antep, Burdur, Çanakkale, Karaman, Manisa (Hazır 2010, Hazır et al. 2014); Mersin (this study) (Fig. 11).

Figure 11. doi

Distribution of *A. bisulcata* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Hirschfeldia incana* (L.) Lagr.-Foss.

Andrena (*Cryptandrena*) *brumanensis* Friese, 1899

Materials

a. countryCode: TR; stateProvince: Muğla; county: Marmaris; locality: Bördübet road; verbatimElevation: 195 m; verbatimLatitude: 36.857; verbatimLongitude: 28.126; eventDate: 04-04-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 4C269114-53C0-5E4C-A100-73EEC5D7F020

b. countryCode: TR; stateProvince: Antalya; locality: Korkuteli-Finike road; verbatimElevation: 1346 m; verbatimLatitude: 36.949; verbatimLongitude: 30.131; eventDate: 10-06-2009; individualCount: 3; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 39748768-1E27-5945-BC6B-DD9E16C9F19B

Distribution

Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, France, Greece, Iran, Israel and the West Bank, Italy, Jordan, Lebanon, Monaco, Montenegro, Palestine, Slovenia, Syria and Türkiye (Gusenleitner and Schwarz 2002, Wood and Monfared 2022, Wood et al. 2024, Wood 2025).

Distribution in Türkiye: Adana, Ankara, Balıkesir (Ayvalık), Bursa, Çanakkale (Bigadiç), İstanbul (Kilyos), Konya, Mersin (Mut), Muş, Şanlıurfa (Birecik) (Warncke 1974); Erzurum (Oltu), Muş (Özbek 1976); Diyarbakır (Hazır 2010); Ankara, Antalya, Diyarbakır, Konya, Mersin, Urfa (Hazır et al. 2014); Antalya, Muğla (this study) (Fig. 12).

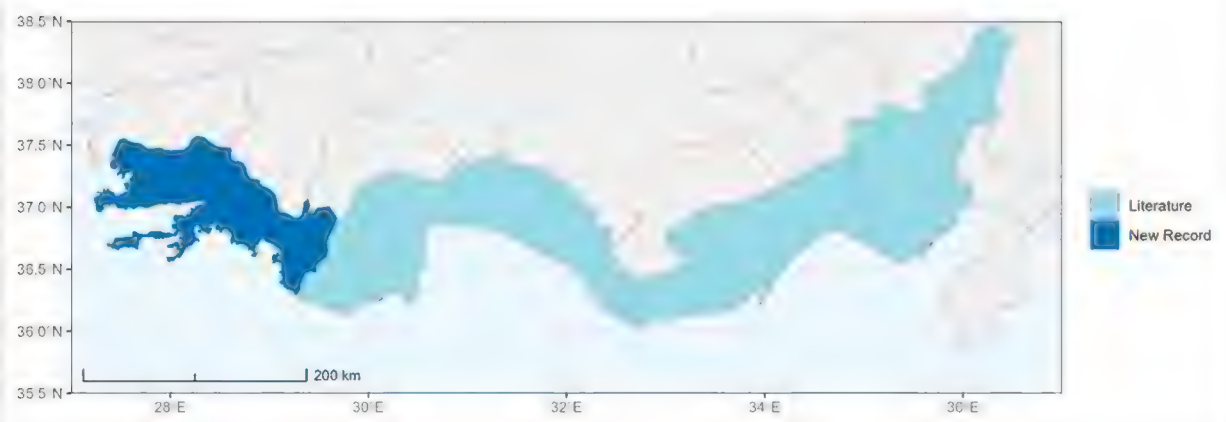

Figure 12. doi

Distribution of *A. brumanensis* in the Mediterranean Region of Türkiye.

Flower records

Caryophyllaceae: *Silene colorata* Poir. **Plantaginaceae**: *Plantago lagopus* L., *Veronica barrelieri* H.Schott ex Roem. & Schult. (Lanuza et al. 2025); **Asteraceae**: *Crepis* L.

Andrena (*Micrandrena*) *cedricola* Wood, 2020

Materials

a. countryCode: TR; stateProvince: Niğde; locality: Alihoca village; verbatimElevation: 1173 m; verbatimLatitude: 37.483; verbatimLongitude: 34.705; eventDate: 22-05-2008; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: F65FE683-2AAC-5258-977A-D555127C05AB

b. countryCode: TR; stateProvince: Niğde; locality: Alihoca village; verbatimElevation: 1173 m; verbatimLatitude: 37.483; verbatimLongitude: 34.705; eventDate: 22-05-2008; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: D696C389-DFE5-579A-B4C5-2C9140B0BBF1

Distribution

Iraq, Israel and the West Bank, Lebanon, Syria and Türkiye (Pisanty et al. 2022, Wood et al. 2024).

Distribution in Türkiye: Hakkari (Pisanty et al. 2022); Niğde (this study) (Fig. 13 and Fig. 14A-C).

Figure 13. doi

Distribution of *A. cedricola* in the Mediterranean Region of Türkiye.

Figure 14. doi

Andrena cedricola, female. Head, frontal view (A); propodeum, dorsal view (B); Habitus, dorsal view (C). *Andrena enslinella*, female. Habitus, dorsal view (D), head, frontal view (E), propodeum, dorsal view (F).

Flower records

Brassicaceae: *Brassica* L., *Peltaria angustifolia* DC. (Pisanty et al. 2022).

Andrena (*Chlorandrena*) *cinereophila* Warncke, 1965

Materials

a. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 20-03-2009; individualCount: 4; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 8CEA5C11-BD49-5E57-9CF4-EE0513BB9D1A

b. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 20-03-2009; individualCount: 4; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: A86228B4-3267-5B30-8D5C-37FBA84F2A94

c. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 475CF6B2-FE80-52A5-A41E-121FE2149296

d. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 5; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 5AA93C3E-36EC-5E69-A6D5-CD71158A2270

e. countryCode: TR; stateProvince: Mersin; locality: Mut-Silifke road; verbatimElevation: 124 m; verbatimLatitude: 36.569; verbatimLongitude: 33.449; eventDate: 22-03-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: AAD51886-409E-5706-AEF4-39F512BBAF59

f. countryCode: TR; stateProvince: Muğla; locality: Marmaris; verbatimElevation: 9 m; verbatimLatitude: 36.985; verbatimLongitude: 28.216; eventDate: 02-04-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: F0C16409-0124-5201-B8B3-3AB78A5C7DF4

Distribution

Afghanistan, Bulgaria, Cyprus, Greece, Iran, Iraq, Israel and the West Bank, Jordan, Lebanon, North Macedonia, Romania, Russia and Türkiye (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2005, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Balıkesir (Ayvalık), Mardin, Sakarya (Adapazarı) (Warncke 1966); Antalya (Paulus et al. 2001); Antep, Aydın, Diyarbakır, Kırklareli, Maraş, Mersin, Urfa (Hazır 2010, Hazır et al. 2014); Adana, Hatay, Mersin, Muğla (this study) (Fig. 15).

Figure 15. doi

Distribution of *A. cinereophila* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Anthemis chia* L., *Crepis commutata* (Spreng.) Greuter, *Helichrysum stoechas* (L.) Moench (Lanuza et al. 2025); **Asteraceae**: *Anthemis chia* L., *Calendula arvensis* L., *Crepis sancta* (L.) Bornm. *Crepis foetida* L., **Brassicaceae**: *Sisymbrium* L.

Andrena (*Simandrena*) *cinnamonea* Warncke, 1975

Material

a. countryCode: TR; stateProvince: Hatay; locality: between Yayladağ and Samandağ; verbatimElevation: 520 m; verbatimLatitude: 35.949; verbatimLongitude: 36.052; eventDate: 22-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: CD6D518F-F204-59FC-A1F5-47297AD6AB7E

Distribution

Türkiye (Gusenleitner and Schwarz 2002).

Distribution in Türkiye: Antalya (Akseki), Hatay (Antakya, Mersin (Mut) (Warncke 1974); Hatay (this study) (Fig. 16).

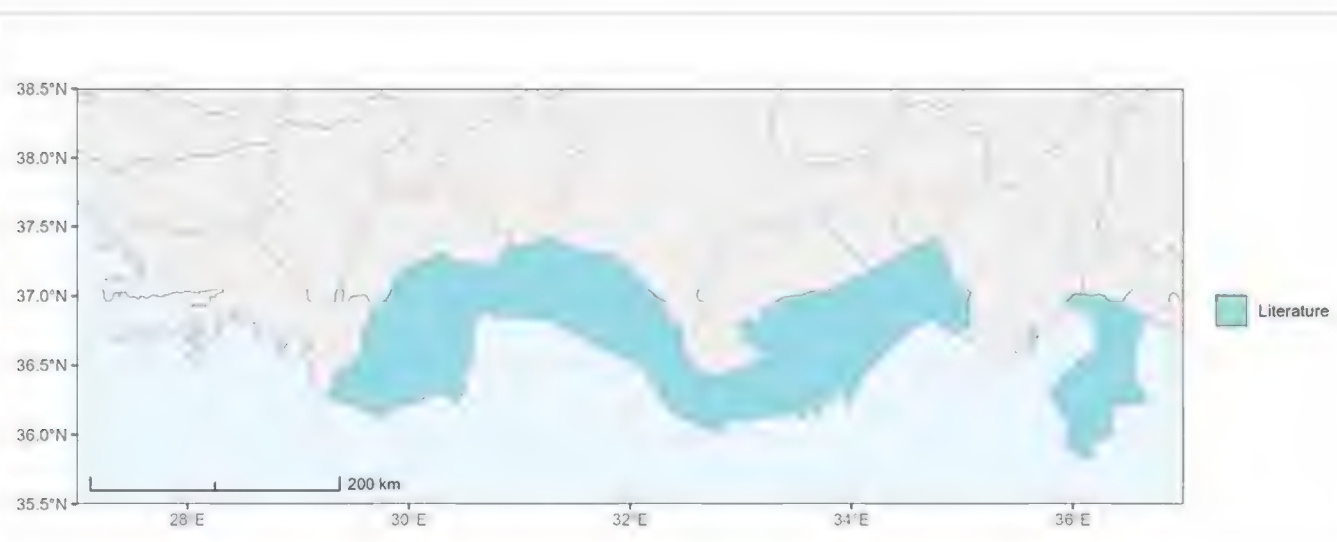

Figure 16. doi

Distribution of *A. cinnamonea* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Crepis sancta* (L.) Bornm.

Andrena (*Brachyandrena*) *colletiformis* Morawitz, 1873

Materials

a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: FCF57C78-D4DD-522D-930F-419919B54530

b. countryCode: TR; stateProvince: Afyon; county: Dazkırı; municipality: Örtülü; verbatimElevation: 1192 m; verbatimLatitude: 37.899; verbatimLongitude: 29.753; eventDate: 12-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: DD6C5F87-0C82-5548-B9CE-E179C5A5B4CA

Distribution

Albania, Bosnia and Herzegovina, Bulgaria, Corsica, Croatia, Cyprus, France, Greece, Iran, Israel and the West Bank, Italy, Kazakhstan, Kafkaslar, Morocco, North Macedonia, Portugal, Romania, Russia, Slovenia, Spain, Tunisia, Turkmenistan, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2005, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Adana, Amanos Mountains, Ankara, Toroslar (Warncke 1966); Adapazarı, Bilecik (Osmaneli), Bursa (Gemlik, Kurlu), Çanakkale, Denizli (Pamukkale), Edirne (İpsala), İstanbul (Selimpaşa), İzmir (Torbalı), Tekirdağ (Warncke 1969); Erzurum (Oltu, Tortum, Horasan, İspir) (Özbek 1976); Aydın (Kuşadası) (Ariana et al. 2009); Antalya, Burdur, Karaman, Manisa (Hazır 2010, Hazır et al. 2014); Afyon, Mersin (this study) (Fig. 17).

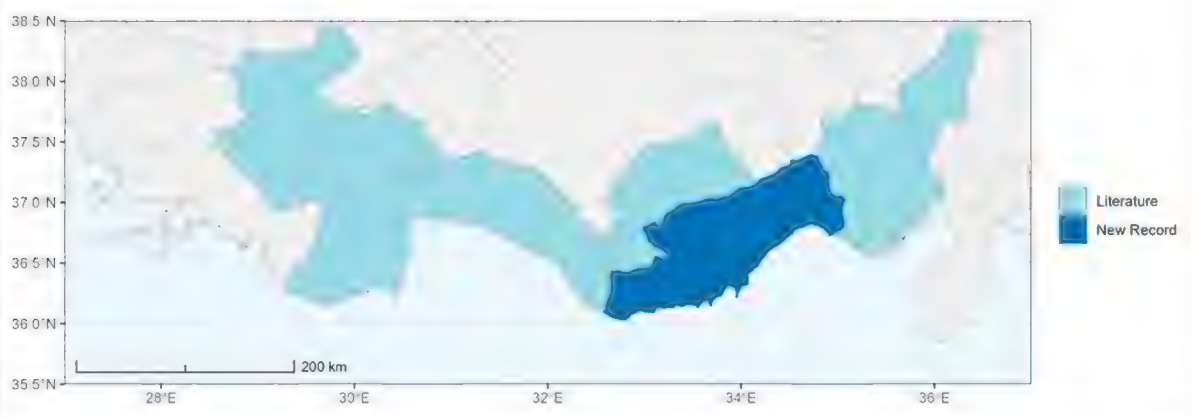

Figure 17. doi

Distribution of *A. colletiformis* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Daucus carota* L. **Asteraceae**: *Pimpinella cretica* Poir. **Asteraceae**: *Helichrysum stoechas* (L.) Moench, *Sonchus tenerrimus* L., **Rosaceae**: *Spiraea*

japonica L.f. (Lanuza et al. 2025); *Prangos uechtritzii* Boiss. & Hausskn., *Cota coelopoda* var. *coelopoda* (Boiss.) Boiss.

Andrena (*Truncandrena*) *combusta* Morawitz, 1876

Material

a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Sarıkavak road; verbatimElevation: 665 m; verbatimLatitude: 36.565; verbatimLongitude: 33.63; eventDate: 25-04-2008; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: ADB344B9-1F2A-5596-BE1F-0A7BCB2EA22E

Distribution

Afghanistan, Armenia, Azerbaijan, Iran, Kazakhstan, Pakistan, Syria, Tajikistan, Turkmenistan, Türkiye and Uzbekistan (Schuberth et al. 2001, Wood 2021b, Astafurova et al. 2022, Wood and Monfared 2022, Wood 2025).

Distribution in Türkiye: Ağrı (Ararat), Ankara (Gölbaşı), Nevşehir (Warncke 1974), Erzurum (Horasan), Iğdır (Özbek 1976); Mersin (Hazır 2010); Mersin (this study) (Fig. 18).

Figure 18. doi

Distribution of *A. combusta* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Diplotaxis tenuifolia* (L.) DC.

Andrena (*Cordandrena*) *cordialis* (Morawitz, 1877)

Material

a. countryCode: TR; stateProvince: Burdur; county: Ağlasun; locality: 2-3 km after Köroğlu Pass; verbatimElevation: 1016 m; verbatimLatitude: 37,563 m; verbatimLongitude: 30,707 m; eventDate: 29-05-2009; individualCount: 2; sex: female; recordedBy: Fatih

Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: A231E502-8914-5B1F-8964-00E36677D3E3

Distribution

Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Hungary, Iran, North Macedonia, Romania, Russia, Serbia, Turkmenistan, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2005, Khodarahmi Ghahnavieh and Monfared 2019, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Ankara (Şereflikoçhisar), Bursa (Mustafakemalpaşa), Erzurum, Iğdır, Kayseri (Yeşilhisar), Kırıkkale, Konya (Kulu, Sarayönü), Kütahya, Muş, Samsun, Sakarya (Adapazarı), Tokat (Niksar) (Warncke 1974); Aksaray, Ankara, Aydın, Burdur, Çorum, Hatay, Kastamonu, Konya, Kütahya, Manisa, Sivas (Hazır 2010, Hazır et al. 2014); Burdur (this study) (Fig. 19).

Figure 19. doi

Distribution of *A. cordialis* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Brassica napus* L., *Lepidium draba* L. (Khodarahmi Ghahnavieh and Monfared 2019); **Asteraceae**: *Crepis foetida* L.

Andrena (*Poecilandrena*) *crassana* Warncke, 1965

Material

a. countryCode: TR; stateProvince: Burdur; county: Ağlasun; locality: <10 km after Köroğlu Pass; verbatimElevation: 948 m; verbatimLatitude: 37.636; verbatimLongitude: 30.684; eventDate: 29-05-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 93616C76-075B-5C9F-9407-ACE18EF50C5E

Distribution

Cyprus, Greece, Iran, Iraq, Israel and West Bank, Jordan, Lebanon, North Macedonia, Syria and Türkiye (Gusenleitner and Schwarz 2002, Pisanty et al. 2018, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Antalya (Finike), Bursa (Karacabey), Mersin (Anamur), Muğla (Marmaris) (Warncke 1974); Antalya, Hatay, Kütahya, Muğla (Hazır 2010, Hazır et al. 2014); Burdur (this study) (Fig. 20).

Figure 20. doi

Distribution of *A. crassana* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Crepis foetida* L.

Andrena (*Cordandrena*) *cypria* Pittioni, 1950

Material

a. countryCode: TR; stateProvince: Muğla; county: Marmaris; municipality: Turunç; locality: Datça road; verbatimElevation: 347 m; verbatimLatitude: 36.775; verbatimLongitude: 28.221; eventDate: 03-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 994D2A27-ED8F-5EB3-8740-DBC5F9E511D5

Distribution

Cyprus, Iran, Israel and the West Bank, Jordan, Syria and Türkiye (Gusenleitner and Schwarz 2002, Wood and Monfared 2022).

Distribution in Türkiye: Konya (Sarayönü) (Warncke 1966); Ankara (Gölbaşı, Şereflikoçhisar), Erzurum, Kayseri (Yeşilhisar), Kırşehir (Kaman), Mersin (Mut), Muş, Nevşehir (Ürgüp), Niğde (Ulukışla), Sivas (Gürün) (Warncke 1974, Özbek 1976); Aksaray, Ankara, Aydın, Burdur, Kırşehir, Konya, Manisa, Sivas, Yozgat (Hazır 2010, Hazır et al. 2014); Muğla (this study) (Fig. 21).

Figure 21. doi

Distribution of *A. cypria* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Alyssum* L., *Lepidium draba* L. **Berberidaceae**: *Bongardia chrysogonum* (L.) Spach **Papaveraceae**: *Papaver* L. (Khodarahmi Ghahnavieh and Monfared 2019); **Asteraceae**: *Anthemis chia* L.

Andrena incertae sedis *discordia* Wood, 2023

Material

a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 6AC52A2D-2D56-5C79-821B-32ECD984DACD

Distribution

Iran, Iraq and Türkiye (Wood 2023a, Wood et al. 2024).

Distribution in Türkiye: Hakkari, Mersin (Wood 2023a); Mersin (this study) (Fig. 22).

Flower records

Apiaceae: *Prangos uechtritzii* Boiss. & Hausskn.

Andrena (*Simandrena*) *dorsata* (Kirby, 1802)

Material

a. countryCode: TR; stateProvince: Niğde; county: Çamardı; verbatimElevation: 1570 m; verbatimLatitude: 37.887; verbatimLongitude: 35.112; eventDate: 23-05-2008;

individualCount: 6; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: CA5182FB-17BA-51AB-AECE-C6123241F290

Figure 22. doi

Distribution of *A. discordia* in the Mediterranean Region of Türkiye.

Distribution

Albania, Austria, Belgium, Bulgaria, Corsica, Croatia, Estonia, France, Germany, Great Britain, Greece, Hungary, Iran, Italy, Kazakhstan, Latvia, Lithuania, Luxembourg, Morocco, Netherlands, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and Ukraine (Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Adana, Adapazarı, Eskişehir (Sivrihisar), İstanbul, Konya, Tekirdağ, Toroslar (Gülek) (Warncke 1966); Afyon (Çay), Ankara (Delice), Hatay (Samandağ) (Warncke 1969); Bingöl, Erzincan, Erzurum (Oltu), Kars (Kağızman), Muş (Özbek 1976); Adana, Afyon, Amasya, Ankara, Antalya, Aydın, Burdur, Çorum, Denizli, Hatay, Isparta, Maraş, Karabük, Kastamonu, Kırıkkale, Kırşehir, Konya, Mersin, Samsun (Hazır 2010); Niğde (this study) (Fig. 23).

Figure 23. doi

Distribution of *A. dorsata* in the Mediterranean Region of Türkiye.

Flower records

Convolvulaceae: *Convolvulus* L. **Fabaceae**: *Glycyrrhiza glabra* L., *Medicago sativa* L. (Khodarahmi Ghahnavieh and Monfared 2019); **Alismataceae**: *Alisma plantago-aquatica* L. **Apiaceae**: *Anthriscus sylvestris* (L.) Hoffm., *Chaerophyllum temulum* L., *Conopodium majus* (Gouan) Loret, *Daucus carota* L., *Daucus* L., *Heracleum sphondylium* L., *Oenanthe crocata* L., *Torilis japonica* (Houtt.) DC. **Asteraceae**: *Bellis perennis* L., *Centaurea nigra* L., *Cirsium arvense* (L.) Scop., *Cirsium palustre* (L.) Scop., *Cirsium* Mill., *Crepis capillaris* (L.) Wallr., *Crepis* L., *Hypochaeris radicata* L., *Leontodon hispidus* L., *Leucanthemum vulgare* Lam., *Picris echioides* L., *Picris hieracioides* L., *Pulicaria dysenterica* (L.) Bernh., *Senecio jacobaea* L., *Taraxacum* agg. F.H.Wigg., *Taraxacum officinale* agg. F.H.Wigg., *Tripleurospermum inodorum* (L.) Sch.Bip. **Brassicaceae**: *Alliaria petiolata* (M.Bieb.) Cavara & Grande, *Barbarea vulgaris* W.T.Aiton, *Brassica napus* L., *Brassica* L., *Pimpinella saxifraga* L., *Raphanus raphanistrum* L., *Sinapis alba* L., *Sinapis arvensis* L., *Sisymbrium officinale* (L.) Scop. **Convolvulaceae**: *Convolvulus arvensis* L. **Cornaceae**: *Cornus alba* L. **Cucurbitaceae**: *Bryonia dioica* Bojer **Ericaceae**: *Calluna vulgaris* (L.) Hull, *Erica cinerea* L., *Erica* Tourn. ex L., *Erica tetralix* L. **Fabaceae**: *Medicago lupulina* L., *Trifolium repens* L., *Ulex europaeus* L., *Ulex minor* Roth **Fagaceae**: *Castanea sativa* Mill. **Geraniaceae**: *Geranium* Tourn. ex L. **Hypericaceae**: *Hypericum perforatum* L. **Lamiaceae**: *Clinopodium vulgare* L., *Mentha aquatica* L. **Orobanchaceae**: *Odontites vernus* (Bellardi) Dumort., *Vicia sativa* L. **Papaveraceae**: *Papaver rhoeas* L. **Plantaginaceae**: *Veronica chamaedrys* L. **Ranunculaceae**: *Ranunculus repens* L. **Rosaceae**: *Crataegus monogyna* Jacq., *Filipendula ulmaria* (L.) Maxim., *Fragaria* L., *Potentilla erecta* (L.) Raeusch., *Potentilla* L., *Prunus* L., *Prunus spinosa* L., *Rosa* L., *Rubus fruticosus* agg. L., *Rubus idaeus* L., *Rubus* L. **Salicaceae**: *Salix* L. **Sapindaceae**: *Acer campestre* L., *Acer* L. **Viburnaceae**: *Viburnum opulus* L., *Viburnum* L. (Balfour et al. 2022); **Apiaceae**: *Anthriscus sylvestris* (L.) Hoffm., *Daucus carota* L., *Heracleum sphondylium* L., *Torilis japonica* (Houtt.) DC. **Asteraceae**: *Bellis perennis* L., *Centaurea nigra* L., *Cirsium arvense* (L.) Scop., *Cirsium vulgare* (Savi) Ten., *Crepis capillaris* (L.) Wallr., *Matricaria chamomilla* L., *Taraxacum* F.H.Wigg., *Tanacetum vulgare* L. **Brassicaceae**: *Brassica juncea* (L.) Czern., *Brassica napus* L., *Lepidium draba* L., *Rorippa sylvestris* (L.) Besser, *Sisymbrium loeselii* L. **Caprifoliaceae**: *Valeriana officinalis* L. **Caryophyllaceae**: *Arenaria serpyllifolia* L. **Cornaceae**: *Cornus alba* L. **Euphorbiaceae**: *Euphorbia esula* L. **Fabaceae**: *Anthyllis montana* L., *Lotus corniculatus* L., *Melilotus albus* Medik., *Melilotus officinalis* (L.) Lam., *Trifolium repens* L. **Hypericaceae**: *Hypericum perforatum* L. **Lamiaceae**: *Lamium amplexicaule* L. **Onagraceae**: *Oenothera biennis* L. **Orchidaceae**: *Orchis mascula* (L.) L. **Ranunculaceae**: *Ranunculus acris* L. **Rosaceae**: *Filipendula ulmaria* (L.) Maxim., *Potentilla erecta* (L.) Raeusch., *Potentilla reptans* L., *Pyrus communis* L., *Rubus* L., *Rubus fruticosus* L., *Sanguisorba minor* Scop. **Scrophulariaceae**: *Verbascum densiflorum* Bertol. **Solanaceae**: *Solanum tuberosum* L. (Lanuza et al. 2025); **Brassicaceae**: *Brassica* L.

Andrena (*Micrandrena*) *enslinella* Stöckhert, 1924

Material

a. countryCode: TR; stateProvince: Niğde; county: Çamardı; verbatimElevation: 1570 m; verbatimLatitude: 37.886; verbatimLongitude: 35.111; eventDate: 23-05-2008; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 6FDC8C99-7382-573D-9939-32B3B0BA6919

Distribution

Austria, Bulgaria, Croatia, Czechia, Greece, Hungary, Iran, Italy, North Macedonia, Poland, Russia, Serbia, Slovakia, Slovenia, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood and Monfared 2022).

Distribution in Türkiye: Ankara, Çorum, İstanbul, Konya (Akşehir), Sivas (Gürün) (Warncke 1974); Antalya (Güzelsu) (Ebmer 2005); Ankara, Isparta (Gelendost) (Hazır et al. 2014); Niğde (this study) (Fig. 24 and Fig. 14D-F).

Figure 24. doi

Distribution of *A. enslinella* in the Mediterranean Region of Türkiye.

Flower records

Rosaceae: *Potentilla reptans* L. (Lanuza et al. 2025); **Brassicaceae**: *Brassica* L.

Andrena (*Campylogaster*) *erberi* Morawitz, 1871

Material

a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Sarıkavak road; verbatimElevation: 665 m; verbatimLatitude: 36.565; verbatimLongitude: 33.63; eventDate: 25-04-2008; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: C6132760-7237-5316-8DEC-6403731EAE9B

Distribution

Bulgaria, Egypt, Greece, Iran, North Macedonia, Romania, Türkiye and the Caucasus (Gusenleitner and Schwarz 2002, Wood and Monfared 2022).

Distribution in Türkiye: Adana (Ceyhan), Ankara, Nevşehir (Ürgüp) (Warncke 1966); Konya (Hazır 2010); Mersin (this study) (Fig. 25).

Figure 25. doi

Distribution of *A. erberi* in the Mediterranean Region of Türkiye.

Flower records

Resedaceae: *Reseda lutea* var. *lutea* L.

Andrena (*Chlorandrena*) *exquisita* Warncke, 1975

Materials

a. countryCode: TR; stateProvince: Hatay; locality: between Yayladağ and Samandağ; verbatimElevation: 440 m; verbatimLatitude: 35.923; verbatimLongitude: 36.054; eventDate: 22-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 853BF550-A6AF-5545-BF70-3ACE55B4C38A

b. countryCode: TR; stateProvince: Hatay; locality: between Yayladağ and Samandağ; verbatimElevation: 440 m; verbatimLatitude: 35.923; verbatimLongitude: 36.054; eventDate: 22-03-2009; individualCount: 6; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 77F462A5-E1DD-5634-A5C1-CB80E16BC759

Distribution

Bulgaria, Cyprus, Georgia, Iran, Israel and the West Bank, Jordan, Lebanon, Russia, Syria and Türkiye (Gusenleitner and Schwarz 2002, Pisanty et al. 2018, Wood et al. 2020).

Distribution in Türkiye: Çanakkale (Bigadiç), İstanbul (Büyükdere) (Warncke 1974, Blank and Kraus 1994); Aydın, Bursa, Çanakkale, Maraş, Kırklareli, Manisa (Hazır 2010, Hazır et al. 2014); Hatay (this study) (Fig. 26).

Figure 26. doi

Distribution of *A. exquisita* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Crepis sancta* (L.) Bornm.

Andrena (*Leimelissa*) *fallax* Eversmann, 1852

Materials

a. countryCode: TR; stateProvince: Antalya; locality: Saklıkent road; verbatimElevation: 1759 m; verbatimLatitude: 36.87; verbatimLongitude: 30.343; eventDate: 11-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: E4730366-05C0-5172-BD7A-E645E106A41E

b. countryCode: TR; stateProvince: Antalya; locality: Saklıkent road; verbatimElevation: 1759 m; verbatimLatitude: 36.87; verbatimLongitude: 30.343; eventDate: 11-06-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: E7C0FA88-55C9-51B1-90DB-A2DBCC36BA0A

c. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.108; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 2C455CF4-A8A2-57F1-A320-4BD1F56044DC

Distribution

Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Hungary, Iran, Romania, Syria and Türkiye (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2008, Wood and Monfared 2022, Wood 2023a).

Distribution in Türkiye: Konya (Beyşehir) (Warncke 1966); Çanakkale (Eceabat), Kırşehir, Nevşehir (Ürgüp), Niğde (Çiftehan), Mersin (Mut), Samsun (Bafra), Muş (Warncke 1974); Erzurum (Oltu, İspir, Tortum) (Özbek 1976); Antalya, Burdur (Hazır 2010); Antalya, Mersin (this study) (Fig. 27).

Figure 27. doi

Distribution of *A. fallax* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Lepidium chalepense* L.

Andrena (*Holandrena*) *flavilabris* Schenck, 1874

Material

a. countryCode: TR; stateProvince: Burdur; locality: Antalya road, Korkuteli turn; verbatimElevation: 783 m; verbatimLatitude: 37.313; verbatimLongitude: 30.49; eventDate: 29-05-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 8E062BBF-0562-542C-B8EB-DDB86EB41DAE

Distribution

Croatia, Cyprus, France, Germany, Greece, Italy, Spain, Switzerland, Türkiye and Ukraine (Ascher and Pickering 2025).

Distribution in Türkiye: Ankara (Şereflikoçhisar) (Warncke 1966); Konya (Kulu), Samsun (Bafra) (Warncke 1974); Erzurum, Muş (Özbek 1976); Burdur (this study) (Fig. 28 and Fig. 29A-C).

Figure 28. doi

Distribution of *A. flavilabris* in the Mediterranean Region of Türkiye.

Figure 29. doi

Andrena flavilabris, female. Head, frontal view (A); propodeum, dorsal view (B); habitus, dorsal view (C). *Andrena fulvago*, female. Habitus, dorsal view (D), head, frontal view (E), propodeum, dorsal view (F).

Flower records

Brassicaceae: *Hirschfeldia incana* (L.) Lagr.-Foss.

Andrena (*Melandrena*) *flavipes* Panzer, 1799

Materials

a. countryCode: TR; stateProvince: Antalya; county: Side; locality: Side hotels; verbatimElevation: 13 m; verbatimLatitude: 36.79; verbatimLongitude: 31.399; eventDate: 13-04-2009; individualCount: 8; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 7433D05D-0E9E-5ACF-B018-07C3C239A266

b. countryCode: TR; stateProvince: Antalya; locality: between Side-Belek; verbatimElevation: 16 m; verbatimLatitude: 36.843; verbatimLongitude: 31.292; eventDate: 13-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 85E3A9F3-B5C0-5CF2-AFDE-C3CB5B292355

c. countryCode: TR; stateProvince: Kahramanmaraş; locality: Andırlı-Kadirli road, Torun village; verbatimElevation: 659 m; verbatimLatitude: 37.503; verbatimLongitude: 36.345; eventDate: 19-07-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: FC87C27B-517B-569C-B195-9CC31B0D0446

d. countryCode: TR; stateProvince: Mersin; locality: Gülnar-Ermenek road; verbatimElevation: 1241 m; verbatimLatitude: 36.366; verbatimLongitude: 33.234; eventDate: 07-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: ADFEFDAC-819D-52DD-84C1-6CD48DD39519

e. countryCode: TR; stateProvince: Antalya; county: Side; verbatimElevation: 1 m; verbatimLatitude: 36.776; verbatimLongitude: 31.414; eventDate: 13-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 58195365-8019-53EB-91A0-90A21215ACCD

f. countryCode: TR; stateProvince: Afyonkarahisar; county: Dazkırı; locality: Örtülü village exit; verbatimElevation: 891 m; verbatimLatitude: 37.899; verbatimLongitude: 29.753; eventDate: 12-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 3AE8B396-A39A-58B3-B1A6-769E6713F07C

g. countryCode: TR; stateProvince: Antalya; locality: Korkuteli-Finike road, Yeşilbayır Plateau; verbatimElevation: 1438 m; verbatimLatitude: 36.956; verbatimLongitude: 30.058; eventDate: 10-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 88083B6E-D494-52D3-A53D-0D715E21D6DF

h. countryCode: TR; stateProvince: Hatay; locality: Belen-Radar road; verbatimElevation: 1124 m; verbatimLatitude: 36.518; verbatimLongitude: 36.234; eventDate: 30-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 54A5EBAF-582C-5D44-B00E-7154CBAB9504

i. countryCode: TR; stateProvince: Antalya; locality: Akseki-Konya road, 2 km before Cevizli turn; verbatimElevation: 1262 m; verbatimLatitude: 37.117; verbatimLongitude: 31.777; eventDate: 09-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 9242A9FC-58A4-5BE1-A04A-84E7183C1186

j. countryCode: TR; stateProvince: Kahramanmaraş; locality: Göksun road; verbatimElevation: 901 m; verbatimLatitude: 37.727; verbatimLongitude: 36.693; eventDate: 02-07-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 03E8DFCF-4C66-5F93-900D-92029FC65105

k. countryCode: TR; stateProvince: Niğde; county: Çamardı; verbatimElevation: 1570 m; verbatimLatitude: 37.886; verbatimLongitude: 35.111; eventDate: 23-05-2008; individualCount: 6; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: D24761B2-1A84-5D40-8877-D7F3A37AE1AB

l. countryCode: TR; stateProvince: Niğde; locality: Karagöl road, Madenköy exit; verbatimElevation: 1756 m; verbatimLatitude: 37.455; verbatimLongitude: 34.623; eventDate: 22-05-2008; individualCount: 3; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 87F5FB3D-39FD-5472-A48B-D376D11BF9A5

Distribution

Distribution. Albania, Algeria, Armenia, Austria, Afghanistan, Belgium, Bosnia and Herzegovina, Bulgaria, China, Croatia, Cyprus, Denmark, Egypt, France, Georgia, Germany, Great Britain, Greece, Hungary, Iran, Israel and the West Bank, Italy, India, Kazakhstan, Latvia, Lebanon, Lithuania, Luxembourg, Malta, Moldova, Morocco, Nepal, Netherlands, North Macedonia, Pakistan, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Sweden, Syria, Tunisia, Turkmenistan, Türkiye, Ukraine and Uzbekistan (Gusenleitner and Schwarz 2002, Wood and Monfared 2022, Wood 2024, Wood et al. 2024, Ascher and Pickering 2025).

Distribution in Türkiye: Balıkesir (Edremit), Bilecik, Bolu (Abant), Burdur, Çanakkale (Truva, Gelibolu), Denizli (Pamukkale), İstanbul (Selimpaşa), İzmir (Ensetepe), Karaman, Samsun (Dikbıyık) (Warncke 1969); Erzurum (Oltu, Tortum, İspir, Horasan, Hınıs, Aşkale), Iğdır, Tunceli, Elazığ (Özbek 1976); Adana, Afyon, Aksaray, Amasya, Ankara, Antalya, Aydın, Bayburt, Bolu, Burdur, Çanakkale, Çankırı, Çorum, Denizli, Düzce, Hatay, Kahramanmaraş, Karabük, Kastamonu, Kırıkkale, Kırşehir, Konya, Kütahya, Manisa, Mersin, Muğla, Nevşehir, Samsun, Sivas, Yozgat (Hazır 2010, Güler 2011, Hazır et al. 2014); Afyon, Antalya, Hatay, Kahramanmaraş, Mersin, Niğde (this study) (Fig. 30).

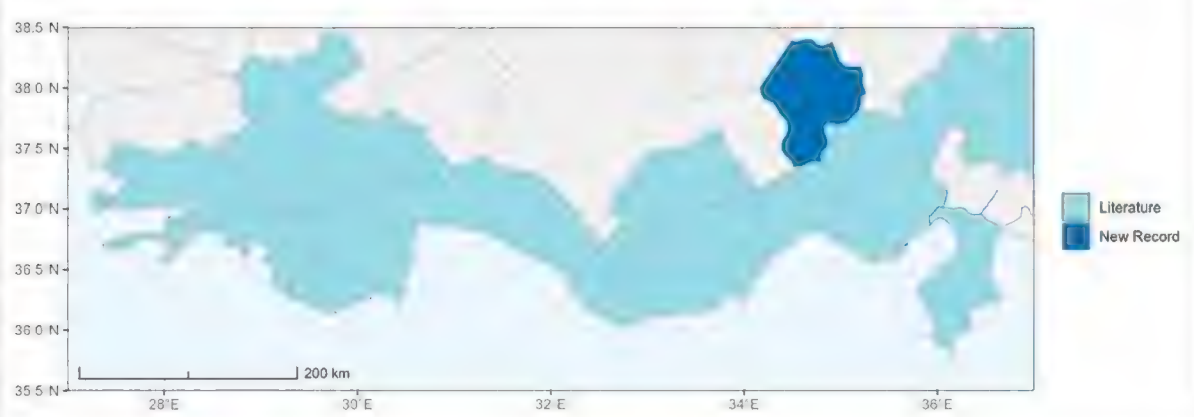

Figure 30. doi

Distribution of *A. flavipes* in the Mediterranean Region of Türkiye.

Flower records

Alliaceae: *Allium cepa* L., *Tragopogon* L. **Asteraceae**: *Centaurea* L., *Cirsium* Mill. **Berberidaceae**: *Bongardia chrysogonum* (L.) Spach **Brassicaceae**: *Alyssum* L., *Brassica napus* L., *Lepidium draba* L., *Descurainia sophia* (L.) Webb ex Prantl, *Lepidium sativum* L. **Convolvulaceae**: *Convolvulus* L. **Fabaceae**: *Medicago sativa* L.,

Melilotus officinalis (L.) Lam. **Papaveraceae**: *Papaver* L. (Khodarahmi Ghahnavieh and Monfared 2019); **Amaryllidaceae**: *Allium* L., *Narcissus* L. **Apiaceae**: *Aegopodium podagraria* L., *Anthriscus* Pers., *Anthriscus sylvestris* (L.) Hoffm., *Daucus carota* L., *Daucus* L., *Dorycnium* Mill., *Heracleum sphondylium* L., *Oenanthe crocata* L., *Pimpinella saxifraga* L., *Smyrnium olusatrum* L., *Torilis japonica* (Houtt.) DC. **Asteraceae**: *Achillea millefolium* L., *Anthemis* L., *Arctium minus* (Hill) Bernh., *Bellis perennis* L., *Centaurea cyanus* L., *Centaurea nigra* L., *Centaurea scabiosa* L., *Cirsium arvense* (L.) Scop., *Cirsium* Mill., *Cirsium vulgare* (Savi) Ten., *Crepis capillaris* (L.) Wallr., *Crepis* L., *Eupatorium cannabinum* L., *Erigeron annuus* (L.) Desf., *Hypochaeris radicata* L., *Leontodon hispidus* L., *Leontodon* L., *Leucanthemum vulgare* Lam., *Picris echioides* L., *Picris hieracioides* L., *Pulicaria dysenterica* (L.) Bernh., *Senecio erucifolius* L., *Senecio jacobaea* L., *Sonchus* L., *Taraxacum* agg. F.H.Wigg., *Taraxacum officinale* agg. F.H.Wigg., *Taraxacum* F.H.Wigg., *Tripleurospermum inodorum* (L.) Sch.Bip. **Brassicaceae**: *Alliaria petiolata* (M.Bieb.) Cavara & Grande, *Arabidopsis thaliana* (L.) Heynh., *Barbarea vulgaris* W.T.Aiton, *Brassica napus* L., *Brassica* L., *Cakile maritima* Scop., *Raphanus raphanistrum* L., *Sinapis alba* L., *Sinapis arvensis* L., *Sinapis* L., *Sisymbrium officinale* (L.) Scop. **Campanulaceae**: *Campanula* L. **Caprifoliaceae**: *Knautia arvensis* (L.) Coult. **Caryophyllaceae**: *Stellaria holostea* L., *Stellaria* L. **Convolvulaceae**: *Convolvulus arvensis* L. **Cornaceae**: *Cornus sanguinea* L. **Cucurbitaceae**: *Bryonia dioica* Bojer **Ericaceae**: *Erica* Tourn. ex L. **Fabaceae**: *Cytisus* Desf., *Laburnum* Fabr., *Lathyrus pratensis* L., *Medicago lupulina* L., *Medicago* L., *Trifolium hybridum* L., *Trifolium pratense* L., *Trifolium repens* L., *Trifolium* Tourn. ex L., *Ulex* L. **Fagaceae**: *Fagus sylvatica* L., *Quercus* L. **Gentianaceae**: *Centaurium erythraea* Rafn **Geraniaceae**: *Geranium* Tourn. ex L. **Lamiaceae**: *Glechoma hederacea* L., *Lamium* L., *Lamium purpureum* L., *Origanum vulgare* L. **Oleaceae**: *Ligustrum vulgare* L. **Onagraceae**: *Chamaenerion angustifolium* (L.) Scop. **Orchidaceae**: *Herminium* L. **Papaveraceae**: *Papaver rhoeas* L. **Plantaginaceae**: *Veronica chamaedrys* L., *Veronica* L. **Polygonaceae**: *Persicaria lapathifolia* (L.) Delarbre **Ranunculaceae**: *Ranunculus bulbosus* L., *Ranunculus ficaria* L., *Ranunculus repens* L., *Ranunculus* L. **Rhamnaceae**: *Rhamnus cathartica* L. **Rosaceae**: *Crataegus monogyna* Jacq., *Filipendula ulmaria* (L.) Maxim., *Fragaria* L., *Potentilla erecta* (L.) Raeusch., *Potentilla* L., *Prunus* L., *Prunus spinosa* L., *Pyrus* L., *Rosa arvensis* Huds., *Rosa* L., *Rubus fruticosus* agg. L., *Rubus idaeus* L., *Rubus* L. **Salicaceae**: *Salix caprea* L., *Salix cinerea* L., *Salix* L. **Sapindaceae**: *Acer campestre* L., *Acer pseudoplatanus* L., *Acer* L., *Aesculus hippocastanum* L. **Viburnaceae**: *Viburnum opulus* L. (Balfour et al. 2022); **Apiaceae**: *Daucus carota* L., *Elaeoselinum* W.D.J.Koch ex DC., *Falcaria vulgaris* Bernh., *Pimpinella cretica* Poir., *Pimpinella major* (L.) Huds., *Pimpinella peregrina* L., *Torilis arvensis* (Huds.) Link **Asphodelaceae**: *Asphodelus aestivus* Brot. **Asteraceae**: *Achillea millefolium* L., *Andryala ragusina* L., *Anthemis arvensis* L., *Anthemis chia* L., *Bellis perennis* L., *Buphthalmum salicifolium* L., *Carduus acanthoides* L., *Calendula arvensis* L., *Centaurea cyanus* L., *Centaurea jacea* L., *Centaurea nigra* L., *Centaurea scabiosa* L., *Centaurea stoebe* L., *Centaurea spinosa* L., *Chamaemelum fuscatum* (Brot.) Vasc., *Chamaemelum nobile* (L.) All., *Cichorium intybus* L., *Cirsium arvense* (L.) Scop., *Cirsium vulgare* (Savi) Ten., *Crepis* L., *Crepis biennis* L., *Crepis capillaris*

(L.) Wallr., *Crepis commutata* (Spreng.) Greuter, *Crepis setosa* Haller f., *Echinops ritro* L., *Erigeron annuus* (L.) Desf., *Eupatorium cannabinum* L., *Glebionis coronaria* (L.) Cass. ex Spach, *Hedypnois cretica* (L.) Dum.Cours., *Helichrysum italicum* (Roth) G.Don, *Helichrysum stoechas* (L.) Moench, *Helminthotheca echioides* (L.) Holub, *Hypochaeris achyrophorus* L., *Hypochaeris radicata* L., *Jacobaea vulgaris* Gaertn., *Jurinea humilis* (Desf.) DC., *Leontodon* L., *Leontodon hispidus* L., *Leontodon saxatilis* Lam., *Leontodon tuberosus* L., *Leucanthemopsis alpina* (L.) Heywood, *Leucanthemum vulgare* Lam., *Pentanema ensifolium* (L.) D.Gut.Larr., Santos-Vicente, Anderb., E.Rico & M.M.Mart.Ort., *Pentanema salicinum* (L.) D.Gut.Larr., Santos-Vicente, Anderb., E.Rico & M.M.Mart.Ort., *Phagnalon saxatile* (L.) Cass., *Picris hieracioides* L., *Senecio* L., *Senecio inaequidens* DC., *Sonchus arvensis* L., *Taraxacum* F.H.Wigg., *Taraxacum campylodes* G.E.Haglund, *Taraxacum officinale* F.H.Wigg., *Xeranthemum cylindraceum* Sm. **Boraginaceae**: *Echium plantagineum* L., *Echium vulgare* L. **Brassicaceae**: *Brassica barrelieri* (L.) Janka, *Brassica juncea* (L.) Czern., *Brassica napus* L., *Bunias orientalis* L., *Erysimum pusillum* Bory & Chaub., *Hirschfeldia incana* (L.) Lagr.-Foss., *Raphanus raphanistrum* L., *Rorippa sylvestris* (L.) Besser, *Sisymbrium loeselii* L. **Campanulaceae**: *Jasione crispa* (Pourr.) Samp. **Caprifoliaceae**: *Valeriana officinalis* L. **Cistaceae**: *Cistus albidus* L., *Cistus crispus* L., *Cistus halimifolius* L., *Cistus ladanifer* L., *Cistus monspeliensis* L., *Cistus parviflorus* Lam., *Cistus salviifolius* L., *Helianthemum oelandicum* (L.) Dum.Cours. **Convolvulaceae**: *Convolvulus arvensis* L. **Cupressaceae**: *Juniperus communis* L. **Euphorbiaceae**: *Euphorbia esula* L. **Fabaceae**: *Adenocarpus hispanicus* (Lam.) DC., *Coronilla varia* L., *Cytisus oromediterraneus* Rivas Mart. & al., *Genista acanthoclada* DC., *Genista hirsuta* Vahl, *Lotus corniculatus* L., *Lotus dorycnium* L., *Medicago falcata* L., *Medicago lupulina* L., *Medicago sativa* L., *Melilotus albus* Medik., *Melilotus officinalis* (L.) Lam., *Onobrychis viciifolia* Scop., *Ononis spinosa* L., *Trifolium arvense* L., *Trifolium campestre* Schreb., *Trifolium fragiferum* L., *Trifolium montanum* L., *Trifolium pratense* L., *Trifolium repens* L. **Geraniaceae**: *Geranium* Tourn. ex L., *Geranium pratense* L., *Geranium pyrenaicum* Burm.f. **Hydrangeaceae**: *Philadelphus coronarius* L. **Hypericaceae**: *Hypericum perforatum* L. **Lamiaceae**: *Origanum vulgare* L., *Satureja thymbra* L., *Teucrium capitatum* L., *Thymbra capitata* (L.) Cav., *Thymus praecox* Opiz, *Thymus pulegioides* L., **Linaceae**: *Linum tenuifolium* L. **Malvaceae**: *Malva alcea* L. **Papaveraceae**: *Papaver rhoeas* L. **Plantaginaceae**: *Plantago* L., *Plantago lanceolata* L., *Plantago media* L., *Veronica persica* Poir. **Plumbaginaceae**: *Armeria caespitosa* (Ortega) Boiss. **Primulaceae**: *Primula veris* L. **Ranunculaceae**: *Ranunculus acris* L., *Ranunculus polyanthemos* L. **Resedaceae**: *Reseda lutea* L. **Rosaceae**: *Fragaria viridis* Weston, *Potentilla erecta* (L.) Raeusch., *Potentilla reptans* L., *Rosa canina* L., *Rubus* L. (Lanuza et al. 2025); **Asteraceae**: *Centaurea iberica* Trev. ex Spreng., *Cichorium intybus* L., *Echinops orientalis* Trautv. **Brassicaceae**: *Brassica* L., *Sinapis arvensis* L., *Sisymbrium altissimum* L. **Fabaceae**: *Melilotus officinalis* (L.) Lam., *Trifolium repens* L., *Trigonella spicata* Sibth. & Sm. **Papaveraceae**: *Glaucium leiocarpum* Boiss. **Ranunculaceae**: *Ranunculus marginatus* d'Urv. **Rosaceae**: *Rubus canescens* var. *glabratus* (Godr.) Davis & Meikle.

Andrena (*Micrandrena*) *floricola* Eversmann, 1852

Material

a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 05D9BE50-AB4A-5FDD-8542-F4DD9E0487D5

Distribution

Austria, Belarus, Belgium, Bosnia and Herzegovina, Czechia, France, Georgia, Germany, Great Britain, Iran, Lithuania, Netherlands, Poland, Russia, Spain, Switzerland and Türkiye (Gusenleitner and Schwarz 2002, Wood and Monfared 2022 , Ascher and Pickering 2025).

Distribution in Türkiye: Adana, Amasya, Ardahan, Balıkesir (Ayvalık), Diyarbakır, Erzurum (Tortum), Eskişehir, Konya (Sarayönü), Mersin (Gülek) (Warncke 1974); Hakkari, Denizli (Karakurt) (Dardón et al. 2014); Mersin (this study) (Fig. 31).

Figure 31. doi

Distribution of *A. floricola* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Foeniculum vulgare* Mill., *Turgenia* Hoffm. **Fabaceae**: *Melilotus officinalis* (L.) Lam. **Ranunculaceae**: *Delphinium* Tourn. ex L. (Khodarahmi Ghahnavieh and Monfared 2019); **Asteraceae**: *Achillea millefolium* L., *Lactuca serriola* L., *Senecio vernalis* Waldst. & Kit., *Tripleurospermum maritimum* (L.) W.D.J.Koch **Brassicaceae**: *Sisymbrium loeselii* L. (Lanuza et al. 2025); **Brassicaceae**: *Lepidium draba* L.

Andrena (*Holandrena*) *forsterella* Osytshnjuk, 1978

Materials

a. countryCode: TR; stateProvince: Adana; locality: Kadirli-Andırın road; verbatimElevation: 224 m; verbatimLatitude: 37.422; verbatimLongitude: 36.281; eventDate: 10-07-2008; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 25855E71-9352-5E89-95B9-D1CA6CC84155

b. countryCode: TR; stateProvince: Kahramanmaraş; locality: Göksun road; verbatimElevation: 901 m; verbatimLatitude: 37.727; verbatimLongitude: 36.693; eventDate: 02-07-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 33433EBD-3354-534B-9321-6D31ED969E08

c. countryCode: TR; stateProvince: Muğla; county: Datça; locality: Ballık hill; verbatimElevation: 0 m; verbatimLatitude: 36.808; verbatimLongitude: 27.901; eventDate: 04-04-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 19A62CB3-680B-5816-BB39-41EAB9B21DCA

d. countryCode: TR; stateProvince: Hatay; locality: between Yayladağ and Samandağ; verbatimElevation: 450 m; verbatimLatitude: 35.923; verbatimLongitude: 36.054; eventDate: 27-04-2008; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 58477EDB-1C91-53D4-9596-30E846A40B22

Distribution

Azerbaijan, Bulgaria, Croatia, Cyprus, Greece, Iran, Israel and the West Bank, Italy, Lebanon, Liechtenstein, Macedonia and Türkiye (Schönitzer et al. 1995, Wood et al. 2020, Wood 2021b, Pisanty et al. 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Erzurum, Muş, Tunceli (Özbek 1976); Antalya (Akseki), Diyarbakır, Konya (Seydişehir), Samsun, Şanlıurfa, Tokat (Niksar) (Schönitzer et al. 1995); Adana (Ceyhan), Ankara (Şereflikoçhisar), Balıkesir (Ayvalık), Bursa (Karacabey), Hatay (Topboğazı), Iğdır, İstanbul (Florya), Konya (Beyşehir), Mersin (Mut, Namrum) (Schuberth 1995, Hazır 2010); Antalya, Antep, Diyarbakır, Konya, Mersin (Hazır et al. 2014); Adana, Hatay, Kahramanmaraş, Muğla (this study) (Fig. 32).

Taxon discussion

In this study, *Andrena wilhelmi* and *Andrena forsterella* are treated as conspecific. We follow the taxonomic classification proposed by Wood (2026), wherein *A. wilhelmi* is considered a synonym of *A. forsterella*.

Flower records

Asteraceae: *Centaurea solstitialis* subsp. *carneola* (Boiss.) Wagenitz, *Echinops orientalis* Trautv., *Glebionis segetum* (L.) Fourr.

Figure 32. doi

Distribution of *A. forsterella* in the Mediterranean Region of Türkiye.

Andrena (*Chrysandrena*) *fulvago* (Christ, 1791)

Material

a. countryCode: TR; stateProvince: Kahramanmaraş; county: Andırın; locality: Çokak village exit; verbatimElevation: 1362 m; verbatimLatitude: 37.76; verbatimLongitude: 36.35; eventDate: 18-07-2009; individualCount: 3; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 89EAE04E-5AB1-540C-99B2-D217C393D871

Distribution

Afghanistan, Albania, Armania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Denmark, Finland, France, Georgia, Germany, Great Britain, Greece, Iran, Italy, Kazakhstan, Latvia, Lithuania, Luxembourg, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Türkiye and Ukraine (Wood and Monfared 2022, Wood 2024, Ascher and Pickering 2025).

Distribution in Türkiye: Bolu (Abant) (Warncke 1969); İstanbul (Belgrad) (Warncke 1974); Ankara, Kırklareli (Hazır et al. 2014); Kahramanmaraş (this study) (Fig. 29D-F and Fig. 33).

Flower records

Asteraceae: *Taraxacum* agg. F.H.Wigg. (Balfour et al. 2022); **Asteraceae**: *Crepis* L., *Crepis capillaris* (L.) Wallr., *Crepis biennis* L., *Hypochaeris radicata* L., *Lapsana communis* L., *Leontodon hispidus* L., *Picris hieracioides* L., *Pilosella* Hill, *Pilosella officinarum* F.W.Schultz & Sch.Bip., *Sonchus oleraceus* L. **Geraniaceae**: *Geranium* Tourn. ex L., *Geranium pyrenaicum* Burm.f., **Ranunculaceae**: *Ranunculus acris* L. (Lanuza et al. 2025); **Asteraceae**: *Cichorium intybus* L.

Figure 33. doi

Distribution of *A. fulvago* in the Mediterranean Region of Türkiye.

Andrena (*Ulandrena*) *fulvitarsis* Brullé, 1833

Material

a. countryCode: TR; stateProvince: Burdur; locality: Ağlasun-Antakya road; verbatimElevation: 1048 m; verbatimLatitude: 37.617; verbatimLongitude: 30.522; eventDate: 29-05-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 1FAA3984-EF9D-5A45-8F4D-E2578C3356CC

Distribution

Albania, Bulgaria, Croatia, Greece, Iran, Israel and the West Bank, Italy, Jordan, Lebanon, North Macedonia, Slovenia, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood et al. 2020, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Adana, Ankara, Antalya (Side), Çanakkale (Truva), Diyarbakır, Edirne, İstanbul (Belgrad Ormanı, Büyükdere), Karaman (Madenşehri), Kayseri (Yeşilhisar), Mersin (Anamur, Gilindire, Gülek), Muğla (Marmaris), Niğde (Ulukışla), Urfa (Birecik) (Warncke 1974); Adana, Ankara, Antalya, Antep, Aydın, İzmir, Karabük, Karaman, Kırşehir, Konya, Kütahya, Manisa (Hazır et al. 2014); Burdur (this study) (Fig. 34).

Figure 34. doi

Distribution of *A. fulvitarsis* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Crepis sancta* (L.) Bornm., *Tripleurospermum* Sch.Bip. (Lanuza et al. 2025); **Asteraceae**: *Anthemis pseudocotula* Boiss.

Andrena (*Melanapis*) *fuscosa* Erichson, 1835

Material

a. countryCode: TR; stateProvince: Antalya; county: Gazipaşa; verbatimElevation: 149 m; verbatimLatitude: 36.192; verbatimLongitude: 32.435; eventDate: 08-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 8819D90A-38CC-5550-841D-DCFDF1D47BCD

Distribution

Afghanistan, Algeria, Austria, Croatia, Cyprus, Dağıstan, Egypt, France, Greece, Hungary, India, Iran, Israel and the West Bank, Italy, Kazakhstan, Libya, Morocco, Moritanya, Pakistan, Poland, Romania, Slovakia, Spain, Switzerland, Tajikistan, Tunisia, Türkiye, Ukraine and Uzbekistan (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2008, Wood and Monfared 2022, Wood 2023b, Wood 2024, Wood 2025, Ascher and Pickering 2025).

Distribution in Türkiye: Adana (Ceyhan, Karataş), Amanos Mountains, Ankara, Balıkesir (Ayvalık), Sakarya (Adapazarı) (Warncke 1966); Aydın (Kuşadası), Bilecik (Warncke 1969); Erzurum (İspir, Horasan) (Özbek 1976); Antep, Konya (Hazır 2010); Antalya, Antep, Aydın, Erzurum, Konya (Hazır et al. 2014); Antalya (this study) (Fig. 35).

Figure 35. doi

Distribution of *A. fuscosa* in the Mediterranean Region of Türkiye.

Flower records

Alliaceae: *Allium cepa* L. **Amaranthaceae**: *Amaranthus* L. **Asteraceae**: *Centaurea virgata* Lam. **Apiaceae**: *Petroselinum* Hill. **Brassicaceae**: *Brassica napus* L., *Descurainia sophia* (L.) Webb ex Prantl **Boraginaceae**: *Anchusa azurea* var. *azurea* Mill. **Chenopodiaceae**: *Chenopodium* L. **Papaveraceae**: *Papaver* L. **Primulaceae**: *Lysimachia arvensis* (L.) U.Manns & Anderb. (Khodarahmi Ghahnavieh and Monfared 2019); **Apiaceae**: *Pimpinella peregrina* L. **Brassicaceae**: *Hirschfeldia incana* (L.) Lagr.-Foss. **Lamiaceae**: *Thymbra capitata* (L.) Cav. (Lanuza et al. 2025); **Brassicaceae**: *Hirschfeldia incana* (L.) Lagr.-Foss.

Andrena (*Simandrena*) *gasparella* Patiny, 1998

Material

a. countryCode: TR; stateProvince: Antalya; locality: Akseki-Konya road; verbatimElevation: 1496 m; verbatimLatitude: 37.14; verbatimLongitude: 31.875; eventDate: 09-06-2009; individualCount: 3; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 1DF6EDF3-6960-53BB-BD92-CA54A4AA6149

Distribution

Iran and Türkiye (Gusenleitner and Schwarz 2002, Khodarahmi Ghahnavieh and Monfared 2019, Wood and Monfared 2022).

Distribution in Türkiye: Konya (Akşehir) (Patiny 1998); Antalya (this study) (Fig. 36 and Fig. 37A-C).

Figure 36. doi

Distribution of *A. gasparella* in the Mediterranean Region of Türkiye.

Figure 37. doi

Andrena gasparella, female. Head, frontal view (A); propodeum, dorsal view (B); habitus, dorsal view (C). *Andrena hungarica* ssp. *macroura*, female. Habitus, dorsal view (D), head, frontal view (E), propodeum, dorsal view (F).

Flower records

Apiaceae: *Foeniculum vulgare* Mill., *Turgenia* Hoffm. **Brassicaceae**: *Brassica napus* L., *Lepidium draba* L., **Fabaceae**: *Papaver* L. **Ranunculaceae**: *Delphinium* Tourn. ex L. (Khodarahmi Ghahnavieh and Monfared 2019); **Brassicaceae**: *Isatis* L.

Andrena (*Chrysandrena*) *glandaria* Warncke, 1975

Materials

a. countryCode: TR; stateProvince: Adana; county: Seyhan; locality: DSI facilities; verbatimElevation: 91 m; verbatimLatitude: 37; verbatimLongitude: 35.33; eventDate: 23-05-2009; individualCount: 9; sex: female; recordedBy: Fatih Dikmen; identifiedBy:

Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 7750ECFB-E3AD-5A1B-81C5-1FC0DD122C2D

b. countryCode: TR; stateProvince: Adana; county: Seyhan; locality: DSI facilities; verbatimElevation: 91 m; verbatimLatitude: 37; verbatimLongitude: 35.33; eventDate: 23-05-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: B3067328-4352-58CE-970B-1607C62E3B68

c. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 23-05-2009; individualCount: 19; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 0255721B-3973-557D-9E26-31EFE8949FDB

d. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 23-05-2009; individualCount: 5; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 935AD164-A264-538F-922F-2B4F0B3C04C4

e. countryCode: TR; stateProvince: Mersin; locality: Mut-Silifke road, Sarıkavak turn; verbatimElevation: 223 m; verbatimLatitude: 36.503; verbatimLongitude: 33.585; eventDate: 22-05-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 1B3C8523-A6E4-5B5E-ADB0-1EC5A977CA48

f. countryCode: TR; stateProvince: Hatay; locality: Yayladağ; verbatimElevation: 423 m; verbatimLatitude: 35.908; verbatimLongitude: 36.078; eventDate: 22-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: F19378B5-B089-5309-A53A-38379F90CBD3

g. countryCode: TR; stateProvince: Muğla; county: Marmaris; locality: Bördübet road; verbatimElevation: 195 m; verbatimLatitude: 36.857; verbatimLongitude: 28.126; eventDate: 04-04-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: AD6EF303-72F8-575D-9C34-179E76ED6081

h. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 145 m; verbatimLatitude: 37.065; verbatimLongitude: 35.366; eventDate: 20-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 8D500D41-BC16-5E13-8327-D8B7126E7F5D

i. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 20-03-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 8E2C97E4-E4FA-523C-BF38-7AED29027374

Diagnosis

Greece, Iraq, Israel and the West Bank, Syria and Türkiye (Gusenleitner and Schwarz 2002).

Distribution in Türkiye: Antalya (Warncke 1974); Urfa (Blank and Kraus 1994); Aydın, Isparta (Gelendost), Muğla (Hazır 2010, Hazır et al. 2014); Adana, Hatay, Mersin, Muğla (this study) (Fig. 38).

Figure 38. doi

Distribution of *A. glandaria* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Calendula arvensis* L., *Crepis* L., *Crepis foetida* L., *Crepis foetida* subsp. *rhoeadifolia* (M.Bieb.) Čelak., *Senecio vernalis* Waldst. & Kit. **Brassicaceae**: *Hirschfeldia incana* (L.) Lagr.-Foss.

Andrena (*Chrysandrena*) *hesperia* Smith, 1853

Materials

a. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 20-03-2009; individualCount: 2; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 9E7F9490-5173-5AD1-BC1C-0745A58D96E5

b. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 2E5A1FD8-B36E-5BAD-A008-F89054DCB34C

Distribution

Algeria, Austria, Cyprus, Croatia, Egypt, France, Greece, Israel and the West Bank, Italy, Morocco, Portugal, Slovenia, Spain, Switzerland, Tajikistan, Tunisia, Turkmenistan, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2005, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Adana, Balıkesir (Ayvalık), Konya (Warncke 1966); Ankara, Antalya (Akseki, Side), Bursa, Denizli (Acıgöl, Pamukkale), Diyarbakır, İstanbul (Büyükçekmece, Büyükdere), Manisa, Mersin (Tarsus) (Warncke 1974); Erzurum

(İspir) (Özbek 1976); Adana, Ankara, Antalya, Aydın, Çanakkale, Karaman, Manisa, Maraş, Muğla (Hazır 2010, Hazır et al. 2014); Adana, Hatay (this study) (Fig. 39).

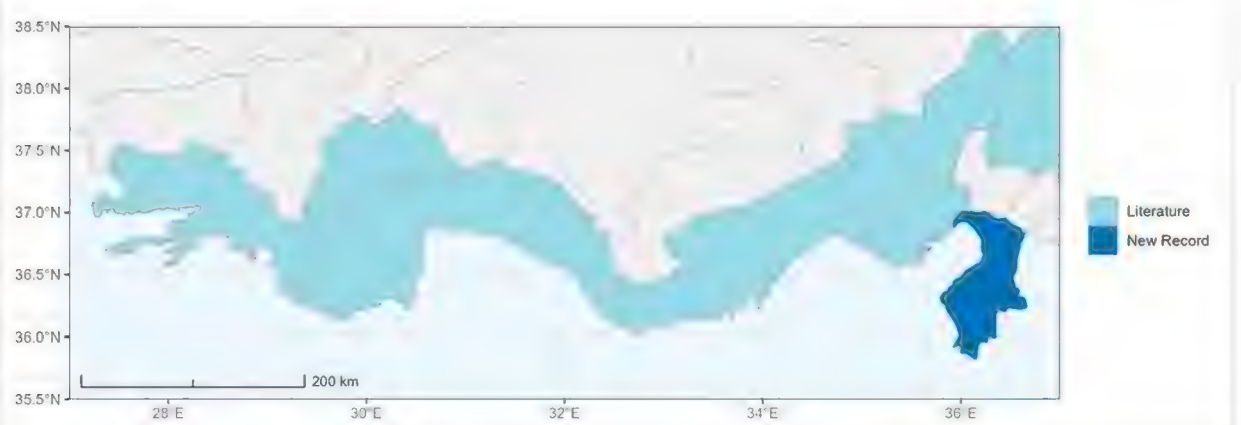

Figure 39. doi

Distribution of *A. hesperia* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Centaurea* L., *Tragopogon* L. **Fabaceae**: *Medicago sativa* L., *Melilotus officinalis* (L.) Lam. (Khodarahmi Ghahnavieh and Monfared 2019); **Asteraceae**: *Bellis annua* L., *Calendula arvensis* L., *Hypochaeris achyrophorus* L., *Leontodon tuberosus* L. (Lanuza et al. 2025); **Asteraceae**: *Calendula arvensis* L., *Crepis sancta* (L.) Bornm.

Andrena (*Chlorandrena*) *humabilis* Warncke, 1965

Materials

a. countryCode: TR; stateProvince: Osmaniye; locality: Karatepe National Park; verbatimElevation: 325 m; verbatimLatitude: 37.26; verbatimLongitude: 36.219; eventDate: 20-03-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 0093D167-4000-5872-83ED-5878661139DA

b. countryCode: TR; stateProvince: Hatay; locality: Yayladağ; verbatimElevation: 423 m; verbatimLatitude: 35.908; verbatimLongitude: 36.078; eventDate: 22-03-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: C6D1FC06-2B03-5846-89A9-CB958DA5B558

c. countryCode: TR; stateProvince: Muğla; county: Marmaris; verbatimElevation: 156 m; verbatimLatitude: 36.87; verbatimLongitude: 28.19; eventDate: 02-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: EB510070-246E-5C5F-BC48-406A56EBF6A2

d. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 20-03-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen;

identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: AF30DB1B-FE16-5531-BBBA-810B2D50DB37

Distribution

Bulgaria, Greece and Türkiye (Gusenleitner and Schwarz 2002).

Distribution in Türkiye: Adana, Balıkesir (Ayvalık, Bigadiç), Bursa (Mustafakemalpaşa, Karacabey), Çanakkale (Truba), Diyarbakır, İstanbul (Büyükdere), Mersin (Gülek) (Warncke 1974); Adana, Antalya, Aydın, Maraş (Hazır 2010, Hazır et al. 2014); Adana, Hatay, Muğla, Osmaniye (this study) (Fig. 40).

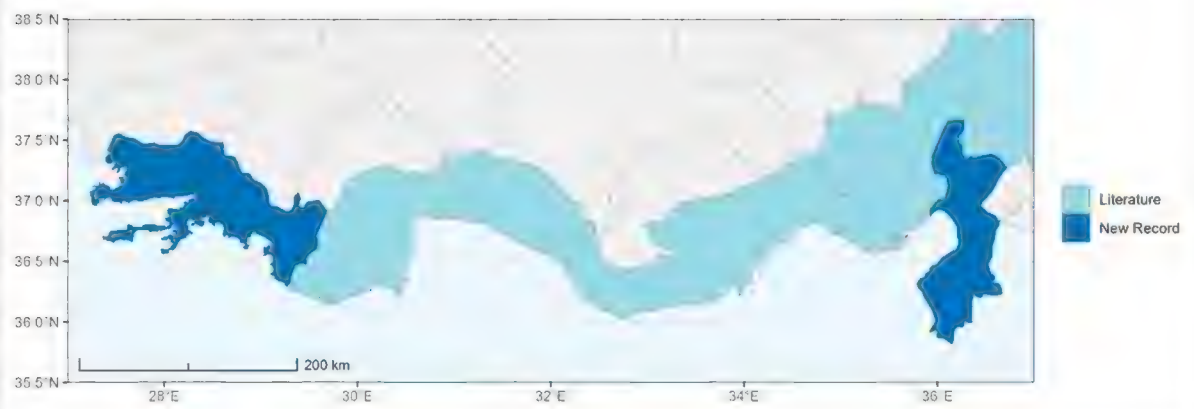

Figure 40. doi

Distribution of *A. humabilis* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Bellis perennis* L., *Senecio vernalis* Waldst. & Kit., *Crepis sancta* (L.) Bornm., *Calendula arvensis* L.

Andrena (*Melandrena*) *hungarica macroura* Warncke, 1975

Material

a. countryCode: TR; stateProvince: Muğla; county: Datça; verbatimElevation: 0 m; verbatimLatitude: 36.802; verbatimLongitude: 27.866; eventDate: 04-04-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 41035E65-36C1-59EE-AFED-553DEEDAEB67

Distribution

The taxonomic situation is complex and confused. True *A. hungarica* Friese, 1887 is probably restricted to the Pannonian Basin (Austria, Slovakia, Hungary, Serbia), with *A. hungarica* ssp. *macroura* seemingly restricted to Türkiye and *A. hungarica* ssp. *khursiensis* Osytshnjuk, 1994 is a junior synonym of *Andrena quadimaculata* Friese, 1921 (TJW, in press). The presence of *A. hungarica* ssp. *macroura* in the coastal

region of Muğla is perplexing, as it has previously only been recorded in central Türkiye; further study of this taxon is required.

Distribution in Türkiye: Ankara, Erzurum, Sivas (Gürün) (Warncke 1974); Muğla (this study) (Fig. 37D-F and Fig. 41).

Figure 41. doi

Distribution of *A. hungarica* ssp. *macroura* in the Mediterranean Region of Türkiye.

Flower records

Cistaceae: *Cistus* L.

Andrena (*Fuscandrena*) *iliaca* Warncke, 1969

Materials

a. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: C1C9384E-D7F3-50CC-921A-CA5C0CDF2CFD

b. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 5; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 9F1AD1D6-A7D3-5E39-98C9-D9AFF5311EDD

Distribution

Iran, Israel and the West Bank, Jordan and Türkiye (Gusenleitner and Schwarz 2002, Ascher and Pickering 2025).

Distribution in Türkiye: Diyarbakır (Hazır et al. 2012, Hazır et al. 2014); Hatay (this study) (Fig. 42 and Fig. 43A-C).

Figure 42. doi

Distribution of *A. iliaca* in the Mediterranean Region of Türkiye.

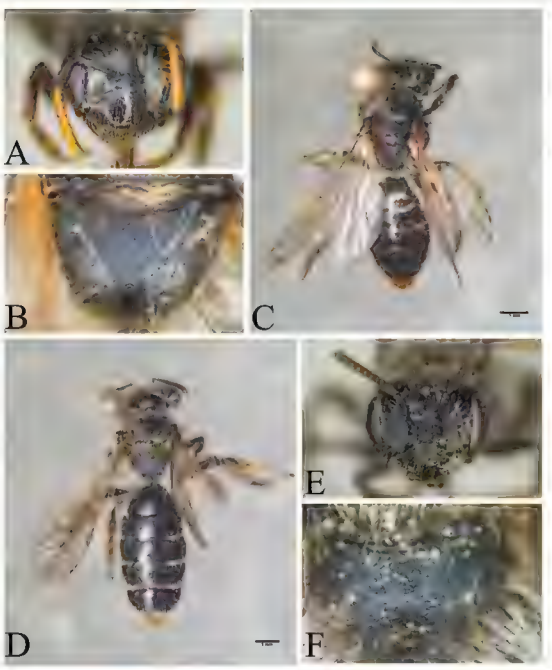

Figure 43. doi

Andrena iliaca, female. Head, frontal view (A); propodeum, dorsal view (B); habitus, dorsal view (C). *Andrena immaculata*, female. Habitus, dorsal view (D), head, frontal view (E), propodeum, dorsal view (F).

Flower records

Brassicaceae: *Sisymbrium* L.

Andrena (*Micrandrena*) *immaculata* Warncke, 1975

Material

a. countryCode: TR; stateProvince: Antalya; locality: Burdur road, Korkuteli turn; verbatimElevation: 783 m; verbatimLatitude: 37.313; verbatimLongitude: 30.49; eventDate: 29-05-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: E7714C29-77BA-5A62-8A8E-FF0E16779B1C

Distribution

Cyprus, Israel and the West Bank, Syria and Türkiye (Gusenleitner and Schwarz 2002 Ascher and Pickering 2025, TJW unpublished data).

Distribution in Türkiye: Ankara (Şereflikoçhisar), Muş (Warncke 1974); Antalya (this study) (Fig. 44).

Figure 44. doi

Distribution of *A. immaculata* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Hirschfeldia incana* (L.) Lagr.-Foss.

Andrena (*Ulandrena*) *isabellina* Warncke, 1969

Material

a. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 8; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 267D525D-18FB-5DCA-9D6C-C73BEB6ABBD4

Distribution

Iran, Israel and the West Bank, Jordan, Lebanon and Türkiye (Gusenleitner and Schwarz 2002, Ascher and Pickering 2025).

Distribution in Türkiye: Hatay (Antakya) (Warncke 1974); Şırnak (Uludere), Hakkari, Gaziantep (Gusenleitner and Schwarz 2000); Hatay (this study) (Fig. 45).

Flower records

Asteraceae: *Crepis sancta* (L.) Bornm.

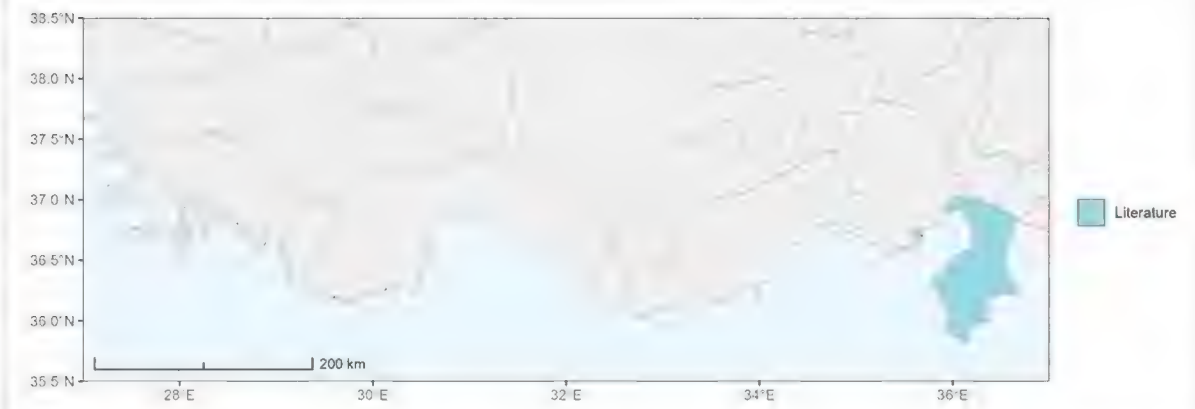

Figure 45. doi

Distribution of *A. isabellina* in the Mediterranean Region of Türkiye.

Andrena (*Ulandrena*) *kriechbaumeri* Schmiedeknecht, 1883

Materials

a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Silifke road; verbatimElevation: 124 m; verbatimLatitude: 36.569; verbatimLongitude: 33.449; eventDate: 22-05-2009; individualCount: 5; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 2215AACF-79EF-5228-889B-7B8EC0DECDEC

b. countryCode: TR; stateProvince: Muğla; county: Marmaris; municipality: Karacasöğüt; verbatimElevation: 0 m; verbatimLatitude: 36.941; verbatimLongitude: 28.185; eventDate: 21-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 0E892810-E3DF-506B-94BC-1FFFA2F8E489

Distribution

Bulgaria, Croatia, Greece, Iraq, Italy, North Macedonia, Syria and Türkiye (Gusenleitner and Schwarz 2002, Wood et al. 2024).

Distribution in Türkiye: Ankara, Amasya (Warncke 1974); Ankara, Antalya, Balıkesir, Kırklareli, Mersin, Muğla (Hazır 2010); Mersin, Muğla (this study) (Fig. 46).

Flower records

Asteraceae: *Crepis foetida* L. (Lanuza et al. 2025); **Asteraceae**: *Crepis foetida* L., *Crepis foetida* subsp. *rhoeadifolia* (M.Bieb.) Čelak.

Andrena (*Holandrena*) *labialis* (Kirby, 1802)

Materials

a. countryCode: TR; stateProvince: Adana; county: Tufanbeyli; locality: Damlalık village; verbatimElevation: 1569 m; verbatimLatitude: 38.33; verbatimLongitude: 36.167;

eventDate: 17-07-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: F5C1A4E1-F5D0-5425-96C6-6285262077C2

b. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 2; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 05FD7DD1-44BA-52C5-9B1D-881E315392F0

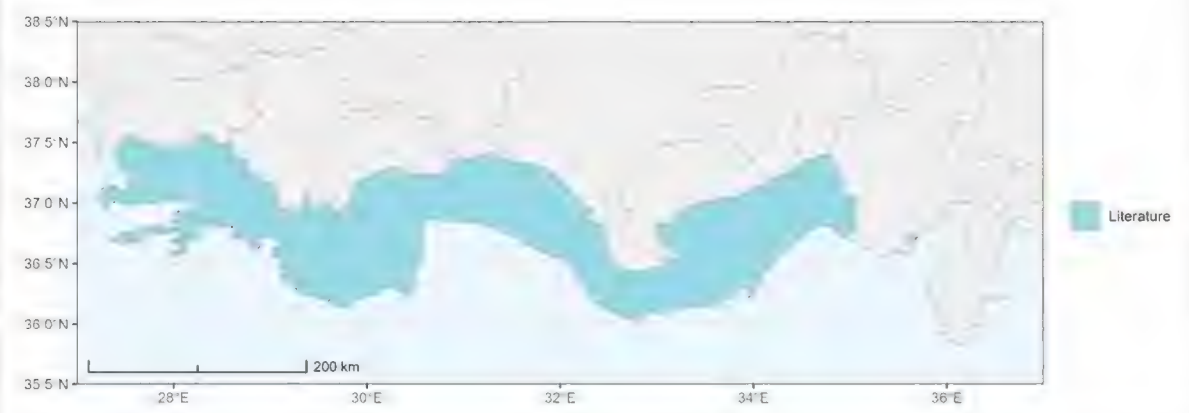

Figure 46. doi

Distribution of *A. kriechbaumeri* in the Mediterranean Region of Türkiye.

Distribution

Albania, Algeria, Austria, Belgium, Bulgaria, Croatia, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Italy, Latvia, Luxembourg, Morocco, Netherlands, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tunisia, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2005, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Ankara (Şereflikoçhisar), Antalya (Finike), Aydın (Bozdoğan), Bursa (Uludağ), Erzurum (İspir, Oltu), Gümüşhane (Zigana), Karaman (Madenşehri), Kars, Konya, Niğde (Ulukışla), Tatos Mountains, Tunceli (Warncke 1974); Bayburt, Elazığ, Erzurum (Hınıs, Horasan, İspir, Narman, Oltu, Tortum), Iğdır, Muş (Özbek 1976); Burdur, Çanakkale, Denizli, Erzincan, Karabük, Kastamonu, Kayseri, Konya, Mersin, Sivas (Hazır 2010, Hazır et al. 2014); Aydın (Kuşadası), Kütahya, Mardin, Mersin, Van (Wood 2024); Adana, Mersin (this study) (Fig. 47).

Flower records

Euphorbiaceae: *Euphorbia* L. **Fabaceae**: *Astragalus* L. **Lamiaceae**: *Mentha longifolia* (L.) L., *Phlomis olivieri* Benth. (Khodarahmi Ghahnavieh and Monfared 2019); **Apiaceae**: *Heracleum sphondylium* L. **Asteraceae**: *Bellis perennis* L., *Hieracium* L., *Leucanthemum vulgare* Lam., *Senecio jacobaea* L., *Taraxacum* agg. F.H.Wigg. **Brassicaceae**: *Raphanus raphanistrum* L., *Sinapis alba* L., *Sinapis* L.

Caryophyllaceae: *Stellaria graminea* L. **Cistaceae**: *Helianthemum nummularium* (L.) Mill. **Ericaceae**: *Erica* Tourn. ex L., *Vaccinium myrtillus* L. **Fabaceae**: *Cytisus scoparius* (L.) Link, *Genista tinctoria* L., *Lathyrus* L., *Lotus corniculatus* L., *Lotus* L., *Medicago* L., *Onobrychis viciifolia* Scop., *Trifolium hybridum* L., *Trifolium pratense* L., *Trifolium repens* L., *Trifolium* Tourn. ex L., *Ulex europaeus* L., *Ulex* L. **Ranunculaceae** : *Ranunculus acris* L., *Ranunculus* L. **Rosaceae**: *Filipendula ulmaria* (L.) Maxim., *Rosa* L., *Rubus fruticosus* agg. L. (Balfour et al. 2022); **Apiaceae**: *Daucus carota* L., *Thapsia villosa* L., *Torilis arvensis* (Huds.) Link **Asteraceae**: *Carduus crispus* L. **Caprifoliaceae**: *Knautia arvensis* (L.) Coult. **Cistaceae**: *Cistus crispus* L. **Fabaceae**: *Genista hirsuta* Vahl, *Hippocrepis comosa* L., *Lotus corniculatus* L., *Lotus dorycnium* L., *Lotus germanicus* (Gremli) Peruzzi, *Medicago sativa* L., *Melilotus albus* Medik., *Onobrychis viciifolia* Scop., *Ononis spinosa* L., *Trifolium campestre* Schreb., *Trifolium hybridum* L., *Trifolium montanum* L., *Trifolium pratense* L., *Trifolium repens* L. **Lamiaceae**: *Salvia verticillata* L., *Thymus vulgaris* L. **Malvaceae**: *Malva sylvestris* L. **Plumbaginaceae**: *Armeria caespitosa* (Ortega) Boiss. (Lanuza et al. 2025); **Asteraceae**: *Scorzonera cana* (C.A.Mey.) Griseb., *Onopordum boissierianum* Raab-Straube & Greuter **Fabaceae**: *Astragalus* L., *Vicia villosa* subsp. *eriocarpa* (Hausskn.) P.W.Ball.

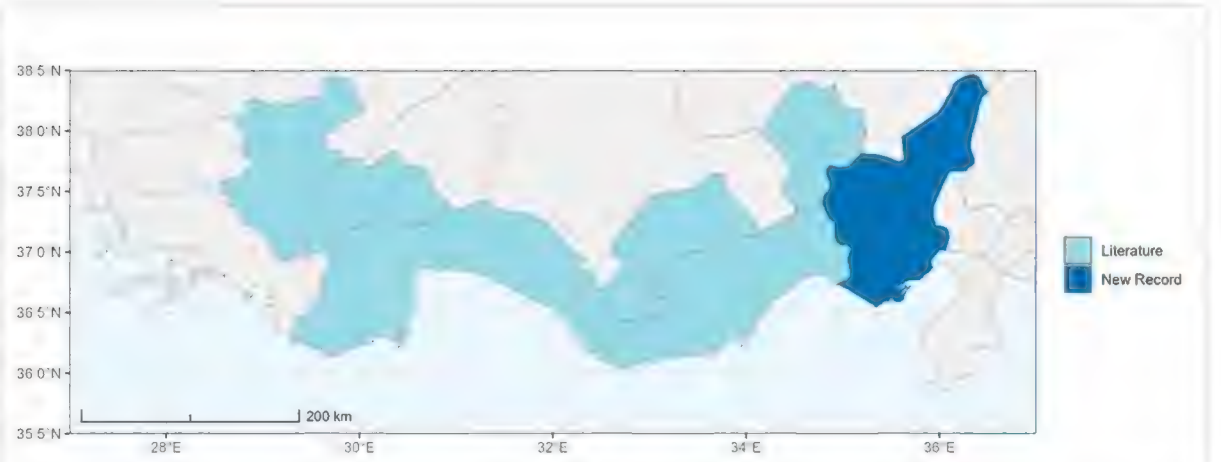

Figure 47. doi

Distribution of *A. labialis* in the Mediterranean Region of Türkiye.

Andrena (*Aciandrena*) *lamiana* Warncke, 1965

Material

a. countryCode: TR; stateProvince: Muğla; county: Marmaris; locality: Bördübet road; verbatimElevation: 195 m; verbatimLatitude: 36.857; verbatimLongitude: 28.126; eventDate: 04-04-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 27726EE8-9AAA-5F58-815A-38398FA63E07

Distribution

Cyprus, Greece, Iran, North Macedonia, Syria and Türkiye (Gusenleitner and Schwarz 2002, Wood and Monfared 2022).

Distribution in Türkiye: Adana, Amasya, Balıkesir (Ayvalık), Eskişehir (Sivrihisar), Hatay, Konya (Sarayönü), Malatya, Sakarya (Adapazarı) (Warncke 1966); Ankara (Hazır et al. 2014); Antep, Kütahya, Mardin, Mersin, Van (Wood 2024); Muğla (this study) (Fig. 48).

Figure 48. doi

Distribution of *A. lamiana* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Crepis commutata* (Spreng.) Greuter, *Glebionis coronaria* (L.) Cass. ex Spach, *Senecio leucanthemifolius* Poir. **Brassicaceae**: *Hirschfeldia incana* (L.) Lagr.-Foss., *Sinapis alba* L. (Lanuza et al. 2025); **Brassicaceae**: *Isatis* L.

Andrena (*Poecilandrena*) *laticeps* Morawitz, 1877

Material

a. countryCode: TR; stateProvince: Niğde; county: Çamardı; verbatimElevation: 1350 m; verbatimLatitude: 38.066; verbatimLongitude: 34.794; eventDate: 23-05-2008; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 2FA7DDC0-06E9-5C51-BAF3-EC2F6A47944D

Distribution

Distribution. Armenia, Georgia, Iran, Iraq and Türkiye (Wood and Monfared 2022, Wood et al. 2024, Ascher and Pickering 2025).

Distribution in Türkiye: Kayseri, Konya (Warncke 1966; Niğde (Ulukışla), Mersin (Sertavul), Sakarya (Adapazarı) (Warncke 1974); Erzincan (Refahiye) (Özbek 1976); Ankara, Karaman, Kütahya, Mersin, Niğde (Hazır 2010, Hazır et al. 2014); Hakkari, Van (Wood and Monfared 2022); Niğde (this study) (Fig. 49).

Figure 49. doi

Distribution of *A. laticeps* in the Mediterranean Region of Türkiye.

Flower records

Plantaginaceae: *Veronica* L. (Warncke 1974)

Andrena (*Simandrena*) *lepida* Schenck, 1861

Material

a. countryCode: TR; stateProvince: Hatay; county: Kırıkhan; locality: Reyhanlı; verbatimElevation: 85 m; verbatimLatitude: 36.508; verbatimLongitude: 36.418; eventDate: 21-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: E69AEE1E-06E6-59F7-916D-2AC5A3CCFA71

Distribution

Algeria, Austria, Bulgaria, Corsica, Cyprus, France, Germany, Great Britain, Greece, Hungary, Italy, Lithuania, Morocco, Morovya, Poland, Portugal, Romania, Russia, Slovakia, Spain, Switzerland, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Ascher and Pickering 2025).

Distribution in Türkiye: Ankara, Balıkesir (Ayvalık), Eskişehir, Konya (Warncke 1966); Erzurum (Özbek 1976); Adana, Ankara, Antalya, Aydın, Burdur, Çorum, Denizli, Karaman, Kastamonu, Kırıkkale, Kırşehir, Konya, Maraş, Yozgat (Hazır 2010); Hatay (this study) (Fig. 50).

Flower records

Cistaceae: *Cistus albidus* L., *Cistus monspeliensis* L., *Cistus salviifolius* L. **Fabaceae** *Vicia lutea* L. (Lanuza et al. 2025); **Brassicaceae**: *Ochthodium aegyptiacum* (L.) DC.

Figure 50. doi

Distribution of *A. lepida* in the Mediterranean Region of Türkiye.

Andrena (*Melandrena*) *limata* Smith, 1853

Material

a. countryCode: TR; stateProvince: Antalya; locality: Side hotels; verbatimElevation: 13 m; verbatimLatitude: 36.79; verbatimLongitude: 31.399; eventDate: 13-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 20CFE819-39F6-5302-88CC-C98DE7508CF8

Distribution

Algeria, Austria, Belgium, Bulgaria, Cyprus, Finland, France, Germany, Greece, Italy, Iraq, Iran, Latvia, Lithuania, Luxembourg, Morocco, Poland, Portugal, Romania, Russia, Slovenia, Spain, Switzerland, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2008, Wood and Monfared 2022, Wood et al. 2024, Ascher and Pickering 2025).

Distribution in Türkiye: Adana, Balıkesir (Ayvalık), Burdur, Nevşehir (Ürgüp), Sakarya (Adapazarı), Toros Mountains (Warncke 1966); Aydın (Germencik), İzmir (Ensetepe) (Warncke 1969); Erzurum (Tortum, Oltu) (Özbek 1976); Ankara, Antalya, Aydın, Bolu, Denizli, Erzurum, Manisa, Muğla, Uşak (Hazır 2010, Hazır et al. 2014); Antalya (this study) (Fig. 51).

Figure 51. doi

Distribution of *A. limata* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Chamaemelum fuscatum* (Brot.) Vasc. **Cistaceae**: *Cistus parviflorus* Lam. **Hydrangeaceae**: *Deutzia scabra* Thunb., *Philadelphus coronarius* L., *Philadelphus incanus* Koehne **Lamiaceae**: *Origanum onites* L. **Plantaginaceae**: *Plantago lanceolata* L., *Thymbra capitata* (L.) Cav. **Rosaceae**: *Crataegus azarolus* L., *Crataegus monogyna* Jacq., *Photinia* Lindl., *Spiraea* L., *Spiraea blumei* G.Don, *Spiraea japonica* L.f. **Solanaceae**: *Eriolarynx australis* (Griseb.) J.M.H.Shaw (Lanuza et al. 2025); **Brassicaceae**: *Sinapis arvensis* L.

Andrena (*Melandrena*) *magna* Warncke, 1965

Material

a. countryCode: TR; stateProvince: Denizli; locality: Ankara road, 3 km Sanayi-Kocabaş; verbatimElevation: 439 m; verbatimLatitude: 37.823; verbatimLongitude: 29.293; eventDate: 12-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: B6A4A593-6443-551D-8E96-07F51410A79A

Distribution

Greece, Romania, Türkiye and Ukraine (Gusenleitner and Schwarz 2002).

Distribution in Türkiye: Amasya (Warncke 1966); Ankara (Gölbaşı), Kayseri (Yeşilhisar), Konya (Akşehir, Kulu), Niğde (Ulukışla) (Warncke 1974); Denizli (this study) (Fig. 52).

Flower records

Asteraceae: *Onopordum acanthium* L.

Figure 52. doi

Distribution of *A. magna* in the Mediterranean Region of Türkiye.

Andrena (*Micrandrena*) *minutula* (Kirby, 1802)

Materials

a. countryCode: TR; stateProvince: Osmaniye; locality: Karatepe National Park; verbatimElevation: 325 m; verbatimLatitude: 37.26; verbatimLongitude: 36.219; eventDate: 20-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 04A5AD37-1A5E-5437-9912-71AB8AB9EF5D

b. countryCode: TR; stateProvince: Muğla; locality: Datça road, Turunç; verbatimElevation: 347 m; verbatimLatitude: 36.774; verbatimLongitude: 28.22; eventDate: 03-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: D01C194A-D3B7-5275-8346-DFFB14D8E880

c. countryCode: TR; stateProvince: Muğla; county: Marmaris; locality: Bördübet road; verbatimElevation: 195 m; verbatimLatitude: 36.857; verbatimLongitude: 28.126; eventDate: 04-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: C41EFA18-7851-537B-AEDE-DC813CDDC923

d. countryCode: TR; stateProvince: Antalya; county: Korkuteli; municipality: Çomaklı; verbatimElevation: 838 m; verbatimLatitude: 37.267; verbatimLongitude: 30.313; eventDate: 29-05-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: CE75B73B-DED1-5B21-BE5E-5366BB226A20

Distribution

Algeria, Armenia, Australia, Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, China, Croatia, Cyprus, Czechia, Denmark, France, Georgia, Germany, Great Britain, Iran, Japan, Lebanon, Libya, Morocco, Netherlands, New Caledonia, Norway, Poland, Portugal, Russia, Slovenia, Spain, Sweden, Switzerland, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood et al. 2020, Pisanty et al. 2022, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: In all parts of the country (Warncke 1974); Antalya, Muğla, Osmaniye (this study) (Fig. 53).

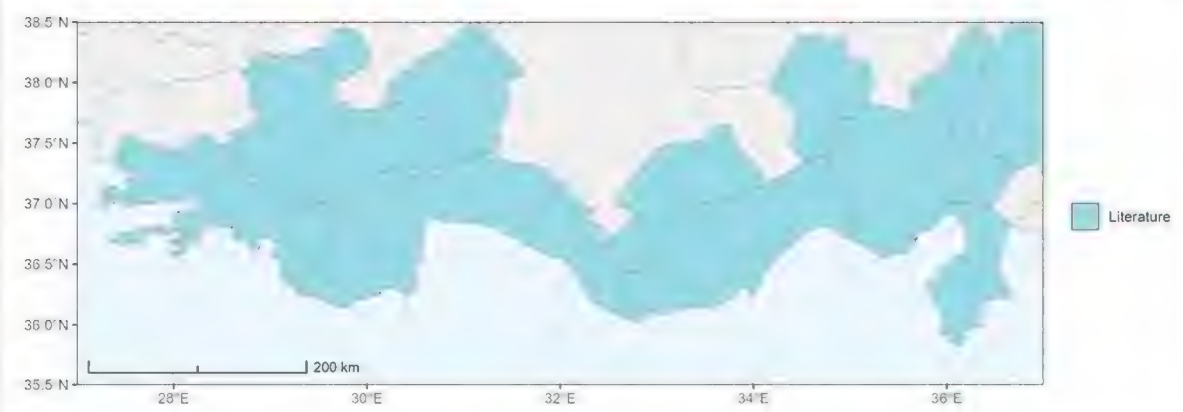

Figure 53. doi

Distribution of *A. minutula* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Anthriscus sylvestris* (L.) Hoffm., *Conopodium majus* (Gouan) Loret, *Daucus carota* L., *Heracleum sphondylium* L., *Pastinaca sativa* L., *Torilis japonica* (Houtt.) DC. **Asteraceae**: *Achillea millefolium* L., *Centaurea nigra* L., *Centaurea scabiosa* L., *Cirsium arvense* (L.) Scop., *Cirsium* Mill., *Crepis capillaris* (L.) Wallr., *Hieracium* agg. L., *Leucanthemum vulgare* Lam., *Matricaria chamomilla* L., *Pilosella officinarum* F.W.Schultz & Sch.Bip., *Sonchus arvensis* L., *Taraxacum* agg. F.H.Wigg., *Taraxacum officinale* agg. F.H.Wigg., *Tripleurospermum inodorum* (L.) Sch.Bip. **Brassicaceae**: *Brassica napus* L., *Sinapis arvensis* L. **Convolvulaceae**: *Convolvulus arvensis* L. **Fabaceae**: *Trifolium* Tourn. ex L. **Geraniaceae**: *Geranium molle* L. **Hypericaceae**: *Hypericum perforatum* L. **Lamiaceae**: *Mentha aquatica* L. **Ranunculaceae**: *Ranunculus bulbosus* L., *Ranunculus repens* L., **Rosaceae**: *Rubus fruticosus* agg. L. (Balfour et al. 2022); **Apiaceae**: *Anthriscus sylvestris* (L.) Hoffm., *Apium graveolens* L., *Astrantia major* L., *Chaerophyllum bulbosum* L., *Chaerophyllum temulum* L., *Daucus carota* L., *Falcaria vulgaris* Bernh., *Heracleum sphondylium* L., *Oenanthe pimpinelloides* L., *Pimpinella major* (L.) Huds., *Pimpinella saxifraga* L., *Pimpinella peregrina* L., *Torilis arvensis* (Huds.) Link, *Torilis japonica* (Houtt.) DC. **Asteraceae**: *Achillea millefolium* L., *Bellis annua* L., *Bellis perennis* L., *Centaurea jacea* L., *Centaurea nigra* L., *Cichorium intybus* L., *Cirsium arvense* (L.) Scop., *Crepis* L., *Crepis capillaris* (L.) Wallr., *Leontodon hispidus* L., *Matricaria chamomilla* L., *Picris hieracioides* L., *Scorzonera humilis* L., *Senecio* L., *Senecio inaequidens* DC., *Senecio leucanthemifolius* Poir., *Senecio vernalis* Waldst. & Kit., *Tanacetum vulgare* L., *Taraxacum campylodes* G.E.Haglund, *Taraxacum officinale* F.H.Wigg., *Pilosella officinarum* F.W.Schultz & Sch.Bip. **Brassicaceae**: *Barbarea vulgaris* W.T.Aiton, *Biscutella laevigata* L., *Brassica arvensis* L., *Brassica napus* L., *Bunias orientalis* L., *Cakile maritima* Scop., *Erysimum crepidifolium* Rchb., *Hirschfeldia incana* (L.) Lagr.-Foss., *Lepidium draba* L., *Rorippa sylvestris* (L.) Besser, *Sisymbrium loeselii* L. **Caryophyllaceae**: *Dianthus hyssopifolius* L., *Stellaria media* (L.) Vill. **Cistaceae**:

Helianthemum nummularium (L.) Mill. **Convolvulaceae**: *Calystegia sepium* (L.) R.Br., *Convolvulus arvensis* L. **Crassulaceae**: *Sedum acre* L., *Sedum album* L., *Sedum sexangulare* L. **Ericaceae**: *Daboecia cantabrica* (Huds.) K.Koch **Fabaceae**: *Astragalus monspessulanus* L., *Hippocrepis comosa* L., *Lotus corniculatus* L., *Lotus dorycnium* L., *Medicago lupulina* L., *Medicago sativa* L., *Melilotus albus* Medik., *Melilotus officinalis* (L.) Lam., *Onobrychis viciifolia* Scop., *Ononis spinosa* L., *Trifolium campestre* Schreb., *Trifolium pratense* L., *Trifolium repens* L., *Trifolium montanum* L. **Geraniaceae**: *Geranium pratense* L., *Geranium pyrenaicum* Burm.f. **Hypericaceae**: *Hypericum perforatum* L. **Lamiaceae**: *Teucrium capitatum* L., *Thymus praecox* Opiz, *Thymus pulegioides* L. **Linaceae**: *Linum catharticum* L., *Linum suffruticosum* L. **Orchidaceae**: *Himantoglossum hircinum* (L.) Spreng. **Oxalidaceae**: *Oxalis corniculata* L. **Plantaginaceae**: *Plantago lanceolata* L., *Veronica chamaedrys* L., *Veronica persica* Poir. **Ranunculaceae**: *Ranunculus* L., *Ranunculus bulbosus* L. **Rosaceae**: *Fragaria viridis* Weston, *Geum urbanum* L., *Potentilla erecta* (L.) Raeusch., *Potentilla reptans* L., *Potentilla verna* L., *Prunus mahaleb* L., *Rubus* L., *Rubus caesius* L. (Lanuza et al. 2025); **Asteraceae**: *Anthemis chia* L., *Senecio vernalis* Waldst. & Kit. **Brassicaceae**: *Isatis* L. **Convolvulaceae**: *Convolvulus* L.

Andrena incertae sedis *monacha* Warncke, 1965

Material

a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 50A96BCC-BC5A-5DE0-A37A-05BE2ED3AA38

Distribution

Cyprus, Greece, Iran, Iraq, Lebanon, Syria and Türkiye (Gusenleitner and Schwarz 2002, Wood et al. 2020, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Sakarya (Adapazarı), Balıkesir (Ayvalık), Toroslar (Warncke 1966, Blank and Kraus 1994); Adana (Karataş), Antalya (Aspendos, Finike, Side), Çanakkale (Bigadiç), Muğla, Osmaniye (Warncke 1974); Antalya, Aydın (Hazır 2010, Hazır et al. 2014); Mersin (this study) (Fig. 54).

Flower records

Asteraceae: *Crepis alpina* L.

Figure 54. doi

Distribution of *A. monacha* in the Mediterranean Region of Türkiye.

Andrena (*Hamandrena*) *nasuta* Giraud, 1863

Material

a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 7FD0DCF4-D4F0-5D44-8FD1-1DF8203F4F1F

Distribution

Armenia, Austria, Bulgaria, Czech Republic, Germany, Greece, Hungary, Iran, Lithuania, Poland, Romania, Slovakia, Switzerland and Türkiye (Gusenleitner and Schwarz 2002).

Distribution in Türkiye: Ankara (Warncke 1966); Erzurum, Karaman, Konya, Niğde (Warncke 1974); Ankara, Aydın, Karaman, Kayseri, Kütahya (Hazır 2010, Hazır et al. 2014); Mersin (this study) (Fig. 55).

Figure 55. doi

Distribution of *A. nasuta* in the Mediterranean Region of Türkiye.

Flower records

Boraginaceae: *Anchusa leptophylla* subsp. *leptophylla* Roem. & Schult.

Andrena (*Ulandrena*) *neocypriaca* Mavromoustakis, 1956

Material

a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Silifke road, Sarıkavak turn; verbatimElevation: 223 m; verbatimLatitude: 36.503; verbatimLongitude: 33.585; eventDate: 22-05-2009; individualCount: 6; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 11A2663E-532D-5E07-B9F3-286EA1C14EFF

Distribution

Cyprus, Greece and Türkiye (Gusenleitner and Schwarz 2002, Wood 2021b).

Distribution in Türkiye: Hatay, Sakarya (Adapazarı) (Warncke 1966); Antalya (Anamur, Side), İzmir, Muğla (Fethiye, Marmaris), Urfa (Birecik) (Warncke 1974); Aydın, Antep, Maraş, Mersin (Hazır 2010); Mersin (this study) (Fig. 56).

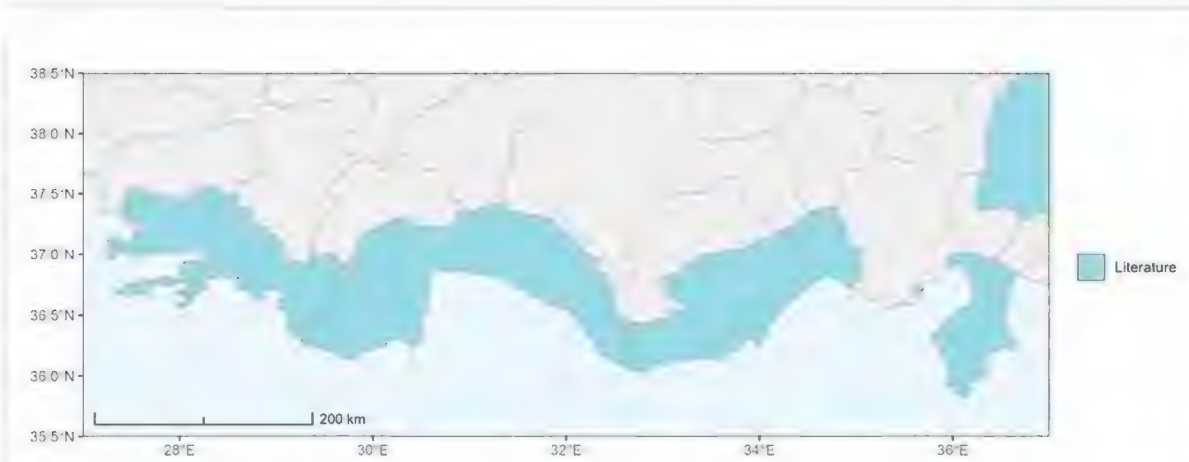

Figure 56. doi

Distribution of *A. neocypriaca* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Crepis foetida* L.

Andrena (*Melandrena*) *nigroaenea* (Kirby, 1802)

Materials

a. countryCode: TR; stateProvince: Antalya; locality: Side hotels; verbatimElevation: 13 m; verbatimLatitude: 36.79; verbatimLongitude: 31.399; eventDate: 13-04-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J.

Wood; collectionCode: ZMUI; occurrenceID: A14B1A92-BF7E-5E9C-B7A8-A88282C925AD

b. countryCode: TR; stateProvince: Antalya; locality: Alanya entrance; verbatimElevation: 11 m; verbatimLatitude: 36.656; verbatimLongitude: 31.701; eventDate: 14-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 11824214-303F-5888-A310-059419775634

Distribution

Afghanistan, Algeria, Armenia, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Cyprus, Croatia, Czechia, Democratic Republic of the Congo, Denmark, Egypt, Estonia, Finland, France, Georgia, Germany, Great Britain, Greece, Hungary, Iran, Israel and the West Bank, Italy, Latvia, Lebanon, Libya, Morocco, Netherlands, New Caledonia, Norway, Poland, Portugal, Romania, Russia, Slovakia, Spain, Syria, Ukraine, Tunisia and Türkiye (Gusenleitner and Schwarz 2002, Ascher and Pickering 2025)

Distribution in Türkiye: Adana, Balıkesir (Ayvalık), Eskişehir (Sivrihisar), Konya, Malatya, Manisa, Nevşehir (Ürgüp), Toroslar (Warncke 1966); Ankara, Antalya, Aydın, Kastamonu, Kütahya, Muğla (Hazır et al. 2014); Antalya (this study) (Fig. 57).

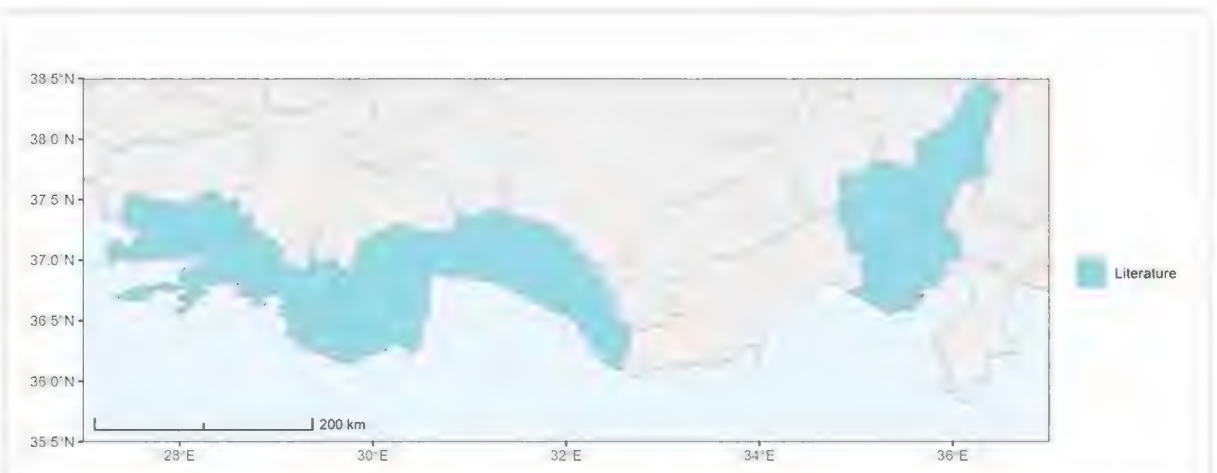

Figure 57. doi

Distribution of *A. nigroaenea* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Anthriscus* Pers., *Anthriscus sylvestris* (L.) Hoffm., *Chaerophyllum temulum* L., *Heracleum sphondylium* L., *Oenanthe crocata* L. **Aquifoliaceae**: *Ilex aquifolium* L. **Asteraceae**: *Achillea millefolium* L., *Anthemis* L., *Bellis perennis* L., *Crepis* L., *Leucanthemum vulgare* Lam., *Taraxacum* agg. F.H.Wigg., *Taraxacum officinale* agg. F.H.Wigg., *Taraxacum* F.H.Wigg., *Tripleurospermum inodorum* (L.) Sch.Bip. **Brassicaceae**: *Brassica napus* L., *Cakile maritima* Scop., *Coincya wrightii* (O.E.Schulz) Stace, *Sisymbrium officinale* (L.) Scop. **Caryophyllaceae**: *Silene dioica* (L.) Clairv. **Cistaceae**: *Helianthemum nummularium* (L.) Mill. **Cornaceae**: *Cornus sanguinea* L. **Fabaceae**: *Medicago lupulina* L., *Trifolium hybridum* L., *Trifolium repens* L., *Ulex europaeus* L., *Vicia sativa* L. **Geraniaceae**: *Geranium* Tourn. ex L.

Lamiaceae: *Stachys sylvatica* L. **Orchidaceae**: *Orchis mascula* (L.) L. **Plantaginaceae**: *Plantago lanceolata* L. **Ranunculaceae**: *Helleborus* Tourn. ex L., *Ranunculus acris* L., *Ranunculus bulbosus* L., *Ranunculus repens* L., *Ranunculus* L. **Resedaceae**: *Reseda lutea* L. **Rhamnaceae**: *Rhamnus cathartica* L. **Rosaceae**: *Crataegus monogyna* Jacq., *Crataegus* L., *Fragaria* L., *Rubus fruticosus* agg. L., *Rubus* L. **Rubiaceae**: *Galium aparine* L. **Salicaceae**: *Salix* L. **Sapindaceae**: *Acer campestre* L. **Solanaceae**: *Solanum dulcamara* L. **Viburnaceae**: *Sambucus nigra* L. (Balfour et al. 2022); **Aizoaceae**: *Carpobrotus acinaciformis* (L.) L.Bolus **Apiaceae**: *Aegopodium podagraria* L., *Daucus carota* L., *Elaeoselinum* W.D.J.Koch ex DC., *Thapsia foetida* L., *Thapsia villosa* L. **Asparagaceae**: *Ornithogalum narbonense* L. **Asteraceae**: *Achillea millefolium* L., *Chamaemelum fuscatum* (Brot.) Vasc., *Crepis foetida* L., *Glebionis coronaria* (L.) Cass. ex Spach, *Leucanthemum vulgare* Lam., *Pilosella officinarum* F.W.Schultz & Sch.Bip., *Taraxacum* F.H.Wigg., *Taraxacum officinale* F.H.Wigg. **Boraginaceae**: *Echium angustifolium* Mill. **Brassicaceae**: *Arabis hirsuta* (L.) Scop., *Aurinia saxatilis* (L.) Desv., *Biscutella laevigata* L., *Brassica juncea* (L.) Czern., *Brassica napus* L., *Brassica repanda* (Willd.) DC., *Bunias orientalis* L., *Erysimum odoratum* Ehrh. **Buxaceae**: *Buxus sempervirens* L. **Caryophyllaceae**: *Viscaria vulgaris* Bernh. **Cistaceae**: *Cistus albidus* L., *Cistus calycinus* L., *Cistus crispus* L., *Cistus ladanifer* L., *Cistus monspeliensis* L., *Helianthemum apenninum* (L.) Mill., *Helianthemum nummularium* (L.) Mill., *Helianthemum oelandicum* (L.) Dum.Cours. **Cornaceae**: *Cornus sanguinea* L. **Cupressaceae**: *Juniperus communis* L. **Fabaceae**: *Anthyllis vulneraria* L., *Hippocrepis comosa* L., *Lotus dorycnium* L., *Lotus fulgurans* (Porta) D.D.Sokoloff, *Onobrychis viciifolia* Scop., *Trifolium pratense* L., *Trifolium repens* L., *Vicia sativa* L. **Hydrangeaceae**: *Philadelphus coronarius* L., *Philadelphus incanus* Koehne **Lamiaceae**: *Lavandula stoechas* L., *Salvia rosmarinus* Spenn., *Teucrium capitatum* L., *Teucrium fruticans* L., *Thymus vulgaris* L. **Papaveraceae**: *Eschscholzia californica* Cham., *Glaucium flavum* Crantz **Plantaginaceae**: *Veronica arvensis* L. **Plumbaginaceae**: *Armeria maritima* (Mill.) Willd., *Plumbago auriculata* Lam. **Primulaceae**: *Primula veris* L. **Ranunculaceae**: *Helleborus foetidus* L., *Ranunculus* L., *Ranunculus acris* L., *Ranunculus auricomus* L., *Ranunculus bulbosus* L. **Resedaceae**: *Reseda lutea* L., *Reseda luteola* L., *Reseda phyteuma* L. **Rosaceae**: *Crataegus monogyna* Jacq., *Potentilla verna* L., *Prunus spinosa* L., *Pyracantha* M.Roem., *Rubus idaeus* L., *Spiraea* L., *Spiraea blumei* G.Don, *Spiraea japonica* L.f. **Rubiaceae**: *Galium pusillum* L. **Rutaceae**: *Ruta angustifolia* Pers., *Ruta montana* (L.) L. **Salicaceae**: *Salix aurita* L., *Salix repens* L. **Saxifragaceae**: *Saxifraga granulata* L. (Lanuza et al. 2025); **Brassicaceae**: *Sinapis arvensis* L.

Andrena (*Melandrena*) *nitidemula* Scheuchl & Hazır, 2012

Materials

a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen;

identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 94E50711-6E95-50E3-AE89-660D211DF8D7

b. countryCode: TR; stateProvince: Niğde; locality: Çamardı road; verbatimElevation: 1570 m; verbatimLatitude: 37.886; verbatimLongitude: 35.111; eventDate: 23-05-2008; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: A0D53D07-D7E2-5C79-96B3-A37133A9CDAE

Distribution

Armenia, Georgia, Greece, Iran, Iraq, Syria and Türkiye (Scheuchl and Hazır 2012, Rasmont et al. 2017, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Kars (Karakurt) (Scheuchl and Hazır 2012); Ankara, Burdur, Konya, Mersin, Sivas (Hazır et al. 2014); Ankara, Burdur, Hakkari, Konya, Mersin, Sivas (Ascher and Pickering 2025); Mersin, Niğde (this study) (Fig. 58).

Figure 58. doi

Distribution of *A. nitidemula* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Brassica* L.

Andrena (*Nobandrena*) *nobilis* Morawitz, 1873

Materials

a. countryCode: TR; stateProvince: Antalya; locality: Korkuteli-Finike road; verbatimElevation: 1346 m; verbatimLatitude: 36.949; verbatimLongitude: 30.131; eventDate: 10-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: B3F88FC4-87D9-54D6-9340-6B1584E78C41

b. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen;

identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: EF6CC033-0D40-5D31-8FF7-19247C00EA53

Distribution

Armenia, Austria, Azerbaijan, Bulgaria, Croatia, Czechia, Georgia, Greece, Hungary, Iran, Italy, Poland, Romania, Russia, Slovakia, Turkmenistan, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Proshchalykin et al. 2017, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Aksaray, Ankara, Kayseri, Kırıkkale, Konya (Beyşehir), Toros Mountains (Warncke 1966); Adana (Gülek, Pozantı), Amasya, İzmir (Selçuk), Mersin (Sertavul), Nevşehir (Ürgüp) (Warncke 1974); Erzurum (Oltu, Tortum, İspir, Horasan) (Özbek 1976); Aksaray, Ankara, Aydın, Burdur, Çorum, İzmir, Karaman, Konya, Kütahya, Nevşehir, Yozgat (Hazır 2010, Hazır et al. 2014); Antalya, Mersin (this study) (Fig. 59).

Figure 59. doi

Distribution of *A. nobilis* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Sisymbrium altissimum* L.

Andrena (*Micrandrena*) *oedicnema* Warncke, 1975

Materials

a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 5; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 30D97900-92F3-5D78-8E80-7DEB6CA2E467

b. countryCode: TR; stateProvince: Antalya; locality: Akseki-Konya road; verbatimElevation: 1496 m; verbatimLatitude: 37.14; verbatimLongitude: 31.875; eventDate: 09-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J.

Wood; collectionCode: ZMUI; occurrenceID: B1EBF2B9-484A-5C6F-8FBE-759B068FC3FD

Distribution

Greece, Iran, Iraq, Israel and West Bank, Jordan, Lebanon, Syria and Türkiye (Gusenleitner and Schwarz 2002, Pisanty et al. 2018, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Antalya (Akseki), Nevşehir (Warncke 1974); Antalya, Mersin (this study) (Fig. 60).

Figure 60. doi

Distribution of *A. oedicnema* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Prangos uechtritzii* Boiss. & Hausskn. **Brassicaceae**: *Isatis* L.

Andrena (*Truncandrena*) *optata* Warncke, 1975

Materials

a. countryCode: TR; stateProvince: Antalya; locality: between Side-Belek; verbatimElevation: 16 m; verbatimLatitude: 36.843; verbatimLongitude: 31.292; eventDate: 13-04-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: B8523B85-8F9F-5681-9069-965C64560094

b. countryCode: TR; stateProvince: Antalya; locality: Side hotels; verbatimElevation: 13 m; verbatimLatitude: 36.79; verbatimLongitude: 31.399; eventDate: 13-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 01A6F16A-E56A-5F25-940E-794A32B4787D

Distribution

Albania, Bulgaria, Greece, Iran, Lebanon, Syria, Türkiye and Ukraine (Wood et al. 2020, Wood 2021b, Wood and Monfared 2022).

Distribution in Türkiye: Antalya (Serik, Side), Aydın (Kuşadası), Balıkesir (Ayvalık), Burdur (Acıgöl), Bursa, İstanbul (Üsküdar), İzmir (Selçuk), Konya, Manisa (Warncke 1974); Antalya, Aydın, Manisa (Hazır et al. 2014); Antalya (this study) (Fig. 61).

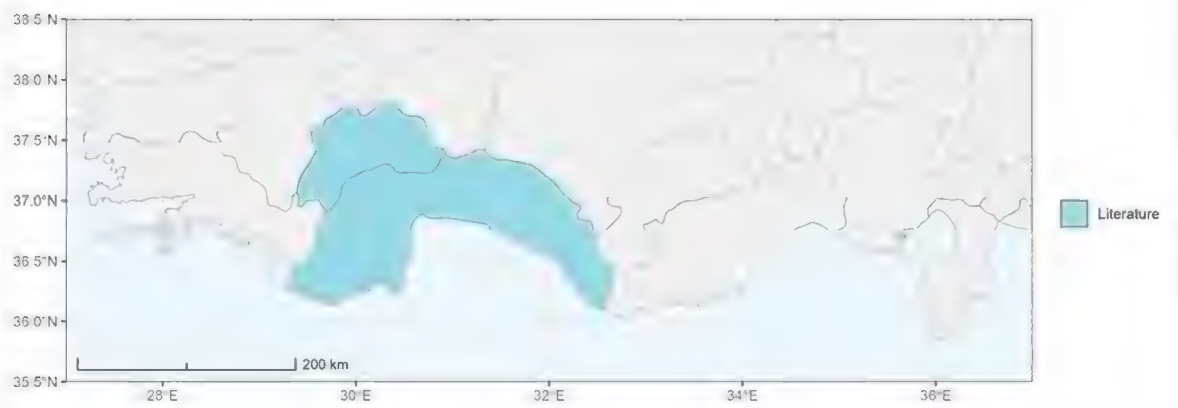

Figure 61. doi

Distribution of *A. optata* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Brassica arvensis* L., *Raphanus raphanistrum* L. (Lanuza et al. 2025); **Brassicaceae**: *Sinapis arvensis* L. **Ranunculaceae**: *Ranunculus marginatus* d'Urv.

Andrena (*Chlorandrena*) *orientana* Warncke, 1965

Material

a. countryCode: TR; stateProvince: Muğla; county: Marmaris; locality: Bördübet road; verbatimElevation: 195 m; verbatimLatitude: 36.857; verbatimLongitude: 28.126; eventDate: 04-04-2009; individualCount: 4; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 3FE642B6-0EFF-5334-9B83-74B37571417A

Distribution

Bulgaria, Cyprus, Hungary, Iran, Israel and the West Bank, Jordan, Lebanon, North Macedonia, Romania, Syria, Türkiye and Ukraine (Schwenninger 2015, Wood et al. 2020, Wood and Monfared 2022).

Distribution in Türkiye: Adana (Misis), Sakarya (Adapazarı), Antalya (Akseki, Manavgat, Side), Balıkesir (Ayvalık), Bursa (İznik), Çanakkale (Bigadiç), Denizli (Pamukkale), Diyarbakır, Hatay, İstanbul (Büyükdere), Manisa, Mersin (Tarsus) (

Warncke 1974); Antalya, Aydın, Urfa, Diyarbakır (Hazır 2010, Hazır et al. 2014); Muğla (this study) (Fig. 62).

Figure 62. doi

Distribution of *A. orientana* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Leontodon tuberosus* L., *Sonchus asper* (L.) Hill (Lanuza et al. 2025); **Asteraceae**: *Crepis* L.

Andrena (*Chlorandrena*) *panurgimorpha* Mavromoustakis, 1957

Materials

a. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 23-05-2009; individualCount: 4; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: D0804C79-2B08-5FF0-9A6F-7410EF8512F3

b. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 23-05-2009; individualCount: 2; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 8914B8D7-FC02-506E-9634-39111EEB31E8

Distribution

Albania, Bulgaria, Cyprus, Greece, Iran, Israel and the West Bank, Jordan, Lebanon, Syria, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood et al. 2020, Wood 2021b, Wood and Monfared 2022).

Distribution in Türkiye: Balıkesir (Ayvalık), Çanakkale (Truva), Konya (Beyşehir) (Warncke 1966); Erzurum (İspir), Muş (Özbek 1976); Aksaray, Ankara, Antalya, Antep, Aydın, Çorum, Konya, Maraş, Mersin, Nevşehir, Niğde, Rize, Urfa (Hazır 2010); Adana (this study) (Fig. 63).

Figure 63. doi

Distribution of *A. panurgimorpha* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Centaurea* L., *Tragopogon* L. **Fabaceae**: *Medicago sativa* L., *Melilotus officinalis* (L.) Lam. (Khodarahmi Ghahnavieh and Monfared 2019); **Asteraceae**: *Crepis commutata* (Spreng.) Greuter (Lanuza et al. 2025); **Asteraceae**: *Crepis foetida* subsp. *rhoeadifolia* (M.Bieb.) Čelak.

Andrena (*Euandrena*) *pileata canigica* Warncke, 1975

Material

a. countryCode: TR; stateProvince: Antalya; locality: Akseki-Konya road; verbatimElevation: 1496 m; verbatimLatitude: 37.14; verbatimLongitude: 31.875; eventDate: 09-06-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 2C1C86EC-CE88-5281-A537-B109A1E2BE30

Distribution

Greece and Türkiye (Wood 2024).

Distribution in Türkiye: Bursa (Uludağ) (Warncke 1974); Bitlis, Hakkari (Wood 2024); Antalya (this study) (Fig. 64 and Fig. 65A-C).

Flower records

Brassicaceae: *Isatis* L.

Figure 64. doi

Distribution of *A. pileata* ssp. *canigica* in the Mediterranean Region of Türkiye.

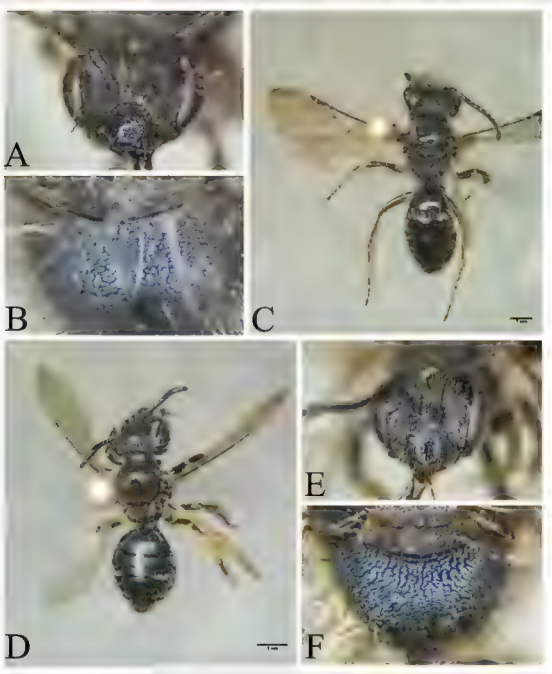

Figure 65. doi

Andrena pileata ssp. *canigica*, male. Head, frontal view (A); propodeum, dorsal view (B); habitus, dorsal view (C). *Andrena rugulosa*, female. Habitus, dorsal view (D), head, frontal view (E), propodeum, dorsal view (F).

Andrena (*Plastandrena*) *pilipes* Fabricius, 1781

Material

a. countryCode: TR; stateProvince: Antalya; county: Gazipaşa; locality: Beyrebucak; verbatimElevation: 93 m; verbatimLatitude: 36.216; verbatimLongitude: 32.392; eventDate: 14-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 79F265F9-C5CE-515B-8D0D-22058FD33ECF

Distribution

Afghanistan, Albania, Andorra, Algeria, Austria, Belgium, Bulgaria, China, Corsica, Croatia, Denmark, Finland, France, Germany, Great Britain, Hungary, Ireland, Iran, Italy, Kazakhstan, Latvia, Lithuania, Libya, Luxembourg, Moldova, Monaco, Morocco, Netherlands, Norway, Pakistan, Poland, Portugal, Romania, Russia, San Marino, Slovakia, Spain, Sweden, Switzerland, Tunisia, Turkmenistan, Türkiye, Ukraine and Uzbekistan (Gusenleitner and Schwarz 2002, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Denizli (Dazkırı) (Warncke 1969); Adana, Aksaray, Ankara, Antalya, Aydın, İzmir, Kırşehir, Konya, Mersin, Niğde (Hazır 2010, Hazır et al. 2014); Antalya (this study) (Fig. 66).

Figure 66. doi

Distribution of *A. pilipes* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Senecio jacobaea* L. (Balfour et al. 2022); **Asparagaceae**: *Asparagus officinalis* L. **Asteraceae**: *Centaurea spinosa* L., *Glebionis coronaria* (L.) Cass. ex Spach, *Leontodon tuberosus* L. **Boraginaceae**: *Echium angustifolium* Mill. **Brassicaceae**: *Bunias orientalis* L., *Hirschfeldia incana* (L.) Lagr.-Foss., *Sisymbrium loeselii* L., *Sisymbrium loeselii* L., *Sisymbrium loeselii* L., *Spiraea* L. **Crassulaceae**: *Petrosedum sediforme* (Jacq.) Grulich **Ericaceae**: *Erica arborea* L., *Rhododendron* L. **Fabaceae**: *Adenocarpus hispanicus* (Lam.) DC. **Lamiaceae**: *Thymbra capitata* (L.) Cav., *Thymus praecox* Opiz **Oxalidaceae**: *Oxalis articulata* Savigny **Papaveraceae**: *Glaucium flavum* Crantz **Rosaceae**: *Crataegus azarolus* L., *Crataegus monogyna* Jacq., *Cydonia oblonga* Mill., *Photinia* Lindl., *Prunus laurocerasus* L. (Lanuza et al. 2025); **Brassicaceae**: *Sinapis arvensis* L.

Andrena (*Notandrena*) *purpureomicans* Alfken, 1935

Material

a. countryCode: TR; stateProvince: Antalya; locality: Burdur road, Korkuteli turn; verbatimElevation: 783 m; verbatimLatitude: 37.313; verbatimLongitude: 30.49; eventDate: 29-05-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 12E75408-842E-522A-9BA5-EEA5FAB3A228

Distribution

Türkiye (Gusenleitner and Schwarz 2002).

Distribution in Türkiye: Adana, Ankara, Konya, Hatay (Warncke 1966); Niğde (Ulukışla) (Warncke 1974); Erzurum (İspir), Muş (Özbek 1976); Aksaray, Ankara, Burdur, Konya, Kütahya, Manisa (Hazır 2010, Hazır et al. 2014); Antalya (this study) (Fig. 67).

Figure 67. doi

Distribution of *A. purpureomicans* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Hirschfeldia incana* (L.) Lagr.-Foss.

Andrena (*Melandrena*) *pyropygia* Kreichbaumer, 1873

Materials

a. countryCode: TR; stateProvince: Karaman; locality: Mut-Ermenek road; verbatimElevation: 1023 m; verbatimLatitude: 36.63; verbatimLongitude: 33.011; eventDate: 05-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 56DD180C-5BF6-5809-9B37-2720796C9556

b. countryCode: TR; stateProvince: Hatay; locality: between Yayladağ and Samandağ; verbatimElevation: 450 m; verbatimLatitude: 35.923; verbatimLongitude: 36.054;

eventDate: 27-04-2008; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 815DDB1F-7F5C-5CFB-8CF3-2DA27D78E6E1

Distribution

Cyprus, Greece, Iran, Israel and the West Bank, Lebanon, Russia, Syria, the Caucasus, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood et al. 2020, Wood and Monfared 2022).

Distribution in Türkiye: Amanos Mountains, Amasya, Bursa, Toros Mountains (Warncke 1966); Aydın (Kuşadası) (Warncke 1969); Aydın, Çorum, Mersin (Hazır 2010, Hazır et al. 2014); Hatay, Karaman (this study) (Fig. 68).

Figure 68. doi

Distribution of *A. pyropygia* in the Mediterranean Region of Türkiye.

Flower records

Resedaceae: *Reseda lutea* var. *lutea* L.

Andrena (*Truncandrena*) *rufomaculata* Friese, 1921

Material

a. countryCode: TR; stateProvince: Hatay; locality: between Kırıkhan and Hassa; verbatimElevation: 131 m; verbatimLatitude: 36.564; verbatimLongitude: 36.402; eventDate: 22-03-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: FA74A199-1B63-5775-A765-EA2A5CDB507A

Distribution

Iran, Iraq, Israel and West Bank, Jordan, Lebanon, Syria and Türkiye (Wood et al. 2020, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Amanos Mountains (Warncke 1966); Hatay (Hazır 2010, Hazır et al. 2014); Hatay (this study) (Fig. 69).

Figure 69. doi

Distribution of *A. rufomaculata* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Sisymbrium* L.

Andrena (*Euandrena*) *rufula* Schmiedeknecht, 1883

Material

a. countryCode: TR; stateProvince: Hatay; locality: Yayladağ; verbatimElevation: 423 m; verbatimLatitude: 35.908; verbatimLongitude: 36.078; eventDate: 22-03-2009; individualCount: 4; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: E15A5BB1-4FD4-5740-A6B2-E37668098ABC

Distribution

Austria, France, Greece, Hungary, Israel and the West Bank, Italy, Lebanon, Netherlands, North Macedonia, Romania, Slovakia, Spain, Switzerland, Syria, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Scheuchl and Willner 2016, Wood et al. 2020, Pisanty et al. 2022).

Distribution in Türkiye: Toroslar (Warncke 1974); Antalya (Pisanty et al. 2022); Hatay (this study) (Fig. 70).

Flower records: Buxaceae: *Buxus sempervirens* L. **Plantaginaceae**: *Globularia vulgaris* L. **Rosaceae**: *Pyrus communis* L. (Lanuza et al. 2025); **Asteraceae**: *Senecio vernalis* Waldst. & Kit.

Figure 70. doi

Distribution of *A. rufula* in the Mediterranean Region of Türkiye.

Andrena (*Micrandrena*) *rugothorace* Warncke, 1965

Materials

a. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 145 m; verbatimLatitude: 37.065; verbatimLongitude: 35.366; eventDate: 20-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 21B1FBDD-310F-5027-BC6B-C83455949280

b. countryCode: TR; stateProvince: Muğla; county: Marmaris; verbatimElevation: 9 m; verbatimLatitude: 36.985; verbatimLongitude: 28.216; eventDate: 02-04-2009; individualCount: 5; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 1E22372D-3CE0-59D9-BA04-0C81CEBD4600

c. countryCode: TR; stateProvince: Muğla; county: Datça; verbatimElevation: 1 m; verbatimLatitude: 36.802; verbatimLongitude: 27.866; eventDate: 04-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: BA6D44FC-8E19-5F7B-BC39-7A6EAADF67AA

d. countryCode: TR; stateProvince: Antalya; locality: Akseki-Konya road; verbatimElevation: 1262 m; verbatimLatitude: 37.117; verbatimLongitude: 31.777; eventDate: 09-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: DC425280-782A-5CFE-B3BE-6C58441C1F98

e. countryCode: TR; stateProvince: Antalya; county: Gazipaşa; locality: Zeytinada; verbatimElevation: 379 m; verbatimLatitude: 36.144; verbatimLongitude: 32.471; eventDate: 14-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 28D32FB9-9375-5D70-9530-BFF33D9C033E

Distribution

Albania, Armenia, Azerbaijan, Georgia, Greece, Israel and the West Bank, North Macedonia and Türkiye (Gusenleitner and Schwarz 2002, Wood 2024).

Distribution in Türkiye: Ankara (Gölbaşı), Balıkesir (Ayvalık), Bolu (Gerede), Bursa (Karacabey), Burdur, Diyarbakır, Edirne, Erzurum (İspir), İstanbul (Belgrad Ormanı, Büyükdere, Üsküdar), Karaman (Madenşehri), Nevşehir, Niğde (Ulukışla) (Warncke 1974); Adana, Antalya, Muğla (this study) (Fig. 71).

Figure 71. doi

Distribution of *A. rugothorace* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Pimpinella peregrina* L. **Asteraceae**: *Tripleurospermum* Sch.Bip. (Lanuza et al. 2025); **Asteraceae**: *Anthemis chia* L., *Anthemis pseudocotula* Boiss., *Calendula arvensis* L. **Cistaceae**: *Cistus* L.

Andrena (*Micrandrena*) *rugulosa* Stöckhert, 1935

Material

a. countryCode: TR; stateProvince: Niğde; locality: Çamardı road; verbatimElevation: 1570 m; verbatimLatitude: 37.886; verbatimLongitude: 35.111; eventDate: 23-05-2008; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 0E183282-C210-5BCA-A789-A8D6E7E5A0F4

Distribution

Albania, Austria, Bulgaria, Croatia, Czechia, France, Germany, Greece, Iran, Italy, Lebanon, North Macedonia, Poland, Romania, Slovakia, Slovenia, the Caucasus and Türkiye (Gusenleitner and Schwarz 2002, Wood and Monfared 2022).

Distribution in Türkiye: Erzurum (Warncke 1974); Niğde (this study) (Fig. 65D-F and Fig. 72).

Figure 72. doi

Distribution of *A. rugulosa* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Brassica* L.

Andrena (*Taeniandrena*) *russula* Lepeletier, 1841

Materials

a. countryCode: TR; stateProvince: Muğla; county: Datça; verbatimElevation: 1 m; verbatimLatitude: 36.802; verbatimLongitude: 27.866; eventDate: 04-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: B9BD5383-60FC-5AD2-8F18-4B754F44B212

b. countryCode: TR; stateProvince: Muğla; county: Marmaris; verbatimElevation: 9 m; verbatimLatitude: 36.985; verbatimLongitude: 28.216; eventDate: 02-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: DBE64CC4-5CA9-5EA0-9B3E-BDF6AF6EA8CD

Distribution

Albania, Algeria, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Denmark, Estonia, Finland, France, Georgia, Germany, Great Britain, Greece, Hungary, Ireland, Israel and the West Bank, Italy, Jordan, Latvia, Lebanon, Lithuania, Luxembourg, Montenegro, Morocco, Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Syria, Tunisia, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Praz et al. 2022, Wood and Monfared 2022).

Distribution in Türkiye: Ankara (Kızılcahamam), Antalya (Akseki), Balıkesir (Ayvalık), Bolu, Erzurum, Konya (Beyşehir), Manisa (Akhisar), Mersin (Gülek) (Warncke 1974); Muğla (this study) (Fig. 73).

Figure 73. doi

Distribution of *A. russula* in the Mediterranean Region of Türkiye.

Flower records

Cistaceae: *Cistus* L.

Andrena (*Opandrena*) *schencki* Morawitz, 1866

Material

a. countryCode: TR; stateProvince: Muğla; county: Datça; locality: Ballık hill; verbatimElevation: 0 m; verbatimLatitude: 36.808; verbatimLongitude: 27.901; eventDate: 04-04-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 07AA8994-9592-5E35-A34D-A4F752E67E3E

Distribution

Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Denmark, France, Georgia, Germany, Great Britain, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Syria, Turkmenistan, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2008, Wood and Monfared 2022).

Distribution in Türkiye: Mersin (Namrun) (Warncke 1969); Amanos Mountains, Balıkesir (Ayvalık), Konya (Beyşehir), Erzurum (Oltu, Hınıs, Pasinler, Horasan) (Özbek 1976); Ankara, Antalya, Aydın, Balıkesir, Çankırı, Çorum, Konya, Kütahya, Mersin (Hazır 2010, Hazır et al. 2014); Muğla (this study) (Fig. 74).

Flower records

Fabaceae: *Trifolium pratense* L. (Lanuza et al. 2025); **Asteraceae**: *Glebionis segetum* (L.) Fourr.

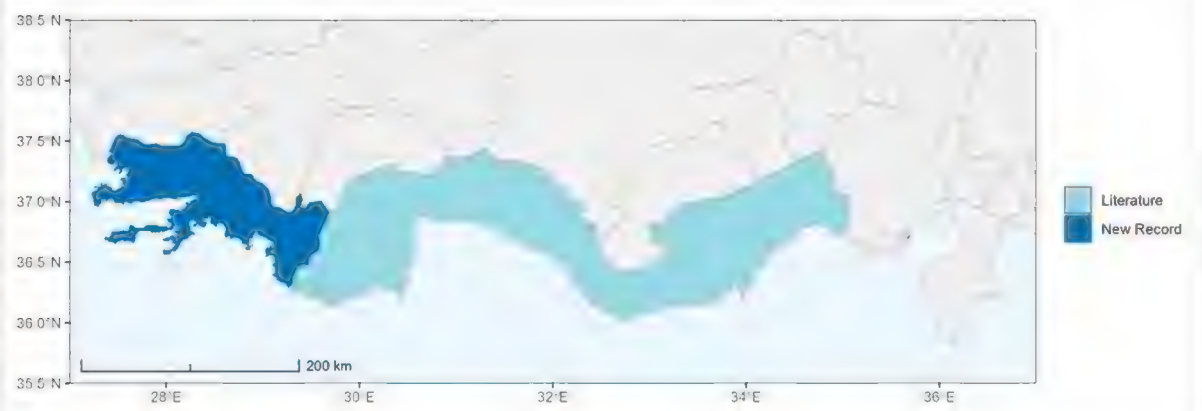

Figure 74. doi

Distribution of *A. schencki* in the Mediterranean Region of Türkiye.

Andrena (*Truncandrena*) *schmiedeknechti* Magretti, 1883

Material

a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 22570572-90D6-5C23-B2D2-2F23AA34F224

Distribution

Algeria, Armenia, Azerbaijan, Georgia, Greece, Italy, Morocco, Tunisia,and Türkiye (Gusenleitner and Schwarz 2002).

Distribution in Türkiye: Balıkesir (Ayvalık), Sakarya (Adapazarı) (Warncke 1966); Bursa (Mustafakemalpaşa), Çanakkale (Bigadiç), İzmir (Selçuk), Kars (Sarıkamış), Karaman (Madenşehri), Kayseri (Yenişehir), Manisa, Nevşehir (Ürgüp), Niğde (Ulukışla) (Warncke 1974); Ankara, Antalya, Aydın, Karaman, Konya, Mersin (Hazır 2010, Hazır et al. 2014); Mersin (this study) (Fig. 75).

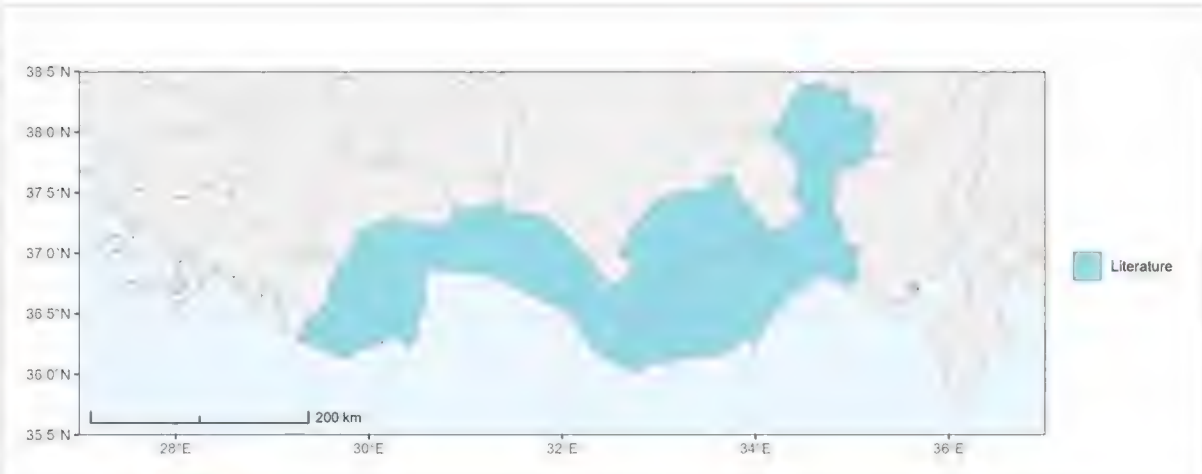

Figure 75. doi

Distribution of *A. schmiedeknechti* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Sisymbrium altissimum* L.

Andrena (*Scitandrena*) *scita* Eversmann, 1852

Materials

a. countryCode: TR; stateProvince: Karaman; locality: Mut-Ermenek road; verbatimElevation: 1023 m; verbatimLatitude: 36.63; verbatimLongitude: 33.011; eventDate: 05-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: CDE10BDB-C4C8-50B7-B11D-C55E6ECCF461

b. countryCode: TR; stateProvince: Karaman; locality: Mut-Ermenek road; verbatimElevation: 1023 m; verbatimLatitude: 36.63; verbatimLongitude: 33.011; eventDate: 05-06-2009; individualCount: 2; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 947F33CD-11F9-5B23-87CF-BDBFC673AB26

c. countryCode: TR; stateProvince: Afyon; county: Dazkırı; locality: Örtülü village exit; verbatimElevation: 891 m; verbatimLatitude: 37.899; verbatimLongitude: 29.753; eventDate: 12-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 232D8AA0-49E1-5F05-94B7-96F166FFFF36

Distribution

Albania, Armenia, Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Georgia, Greece, Hungary, Iran, Israel and the West Bank, Italy, Jordan, Lebanon, North Macedonia, Romania, Russia, Serbia, Slovakia, Slovenia, Syria, Turkmenistan, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood and Monfared 2022).

Distribution in Türkiye: Aksaray, Ankara, Bilecik, Çanakkale (Truva), Denizli (Çardak, Pamukkale), Kayseri (Erciyes), Konya (Beyşehir), Toroslar (Warncke 1966); Erzurum (Oltu, Tortum, İspir, Horasan, Hınıs) (Özbek 1976); Aksaray, Ankara, Antalya, Aydın, Balıkesir, Burdur, Çanakkale, Denizli, Karabük, Karaman, Kırşehir, Kütahya, Mersin, Nevşehir (Hazır 2010, Hazır et al. 2014); Afyon, Karaman (this study) (Fig. 76).

Flower records

Brassicaceae: *Cakile maritima* Scop., *Hirschfeldia incana* (L.) Lagr.-Foss. (Lanuza et al. 2025); **Brassicaceae**: *Brassica elongata* Ehrh., *Erysimum crassipes* Fisch. & C.A.Mey.

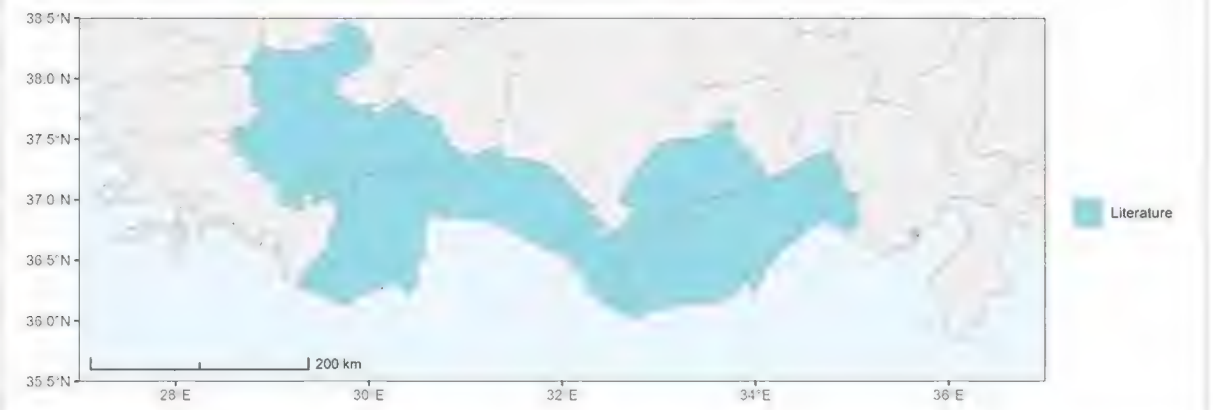

Figure 76. doi

Distribution of *A. scita* in the Mediterranean Region of Türkiye.

Andrena (*Micrandrena*) *spreta* Pérez, 1895

Materials

a. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: EFF39067-B513-5581-BB1E-DF9E8C0A271D

b. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 5B371ECD-FBA6-5A12-B1A6-9FEB6C214775

c. countryCode: TR; stateProvince: Hatay; locality: between Harbiye-Yayladağ; verbatimElevation: 471 m; verbatimLatitude: 36.123; verbatimLongitude: 36.171; eventDate: 21-03-2009; individualCount: 4; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 2A8D4DDA-4346-5B67-89C5-EFE2CAB4176F

d. countryCode: TR; stateProvince: Antalya; locality: Side Hotels; verbatimElevation: 13 m; verbatimLatitude: 36.79; verbatimLongitude: 31.399; eventDate: 13-04-2009; individualCount: 3; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 479E7653-3392-5074-B5EA-F110A26AAE22

e. countryCode: TR; stateProvince: Mersin; county: Anamur; verbatimElevation: 21 m; verbatimLatitude: 36.092; verbatimLongitude: 32.808; eventDate: 06-06-2009; individualCount: 4; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 0D17F19C-C904-57A2-AED5-606FDFF97501

Distribution

Afghanistan, Albania, Algeria, Azerbaijan, Belgium, Croatia, Cyprus, Egypt, France, Greece, Iran, Israel and the West Bank, Italy, Libya, Morocco, Spain, Syria, Tunisia and Türkiye (Gusenleitner and Schwarz 2002, Ascher and Pickering 2025).

Distribution in Türkiye: Adana, Antep, Antalya, Diyarbakır, Malatya, Mersin (Mut, Silifke, Tarsus), Osmaniye, Urfa (Warncke 1974); Antalya, Hatay, Mersin (this study) (Fig. 77).

Figure 77. doi

Distribution of *A. spreta* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Elaeoselinum* W.D.J.Koch ex DC. (Lanuza et al. 2025); **Brassicaceae**: *Hirschfeldia incana* (L.) Lagr.-Foss., *Barbarea plantaginea* DC., *Sisymbrium* L.

Andrena (*Euandrena*) *symphyti* Schmiedeknecht, 1883

Material

a. countryCode: TR; stateProvince: Niğde; county: Çamardı; locality: Pınarbaşı; verbatimElevation: 1512 m; verbatimLatitude: 37.878; verbatimLongitude: 35.107; eventDate: 23-05-2008; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: BBD6BE77-07F0-587A-A89C-C607E7700554

Distribution

Albania, Armenia, Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, France, Georgia, Germany, Gibraltar, Greece, Iran, Iraq, Italy, Moldova, Poland, Romania, Russia, Serbia, Slovakia, Spain, Switzerland, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood and Monfared 2022, Pisanty et al. 2022, Wood et al. 2024, Ascher and Pickering 2025).

Distribution in Türkiye: Adana (Topraklı), Ankara, Erzurum (Horasan, Oltu), Gümüşhane, Hatay, İstanbul, Karaman (Madenşehri), Konya (Akşehir, Sarayönü), Mardin (Tanyeri), Mersin (Mut, Gülek), Nevşehir (Ürgüp), Rize (Çinçiva) (Warncke 1974); Erzurum (Özbek 1976); Aydın (Hazır 2010, Hazır et al. 2014); Kahramanmaraş (Pisanty et al. 2022); Niğde (this study) (Fig. 78).

Figure 78. doi

Distribution of *A. symphyti* in the Mediterranean Region of Türkiye.

Andrena (*Taeniandrena*) *taedium* Wood, 2023

Materials

a. countryCode: TR; stateProvince: Muğla; locality: Datça road, Turunç; verbatimElevation: 347 m; verbatimLatitude: 36.774; verbatimLongitude: 28.22; eventDate: 03-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: F276417C-530B-5D55-94B8-8D849D2E1798

b. countryCode: TR; stateProvince: Niğde; county: Pozantı; locality: Alihoca village exit; verbatimElevation: 1171 m; verbatimLatitude: 37.483; verbatimLongitude: 34.705; eventDate: 23-05-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 4EEBCC15-ACB5-5BCE-830C-1ACFB55E4ED5

c. countryCode: TR; stateProvince: Antalya; locality: Saklıkent road, 4 km; verbatimElevation: 1759 m; verbatimLatitude: 36.87; verbatimLongitude: 30.343; eventDate: 11-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: DBC1ACAC-3318-52CB-9A82-1917FD7B38A4

Distribution

Greece, Iran, Lebanon and Türkiye (Wood 2023a).

Distribution in Türkiye: Adana, Adıyaman, Ağrı, Aydın (Çine), Bolu, Kars, Malatya, Muğla, Nevşehir (Göreme), Niğde (Çamardı), Siirt, Şırnak (Wood 2023a); Antalya, Muğla, Niğde (this study) (Fig. 79).

Flower records

Brassicaceae: *Lepidium chalepense* L., **Fabaceae**: *Securigera libanotica* (Boiss.) Lassen, *Trigonella kotschyi* Fenzl.

Figure 79. doi

Distribution of *A. taedium* in the Mediterranean Region of Türkiye.

Andrena (*Melandrena*) *thoracica* (Fabricius, 1775)

Material

a. countryCode: TR; stateProvince: Niğde; locality: Ulukışla road, 3 km before Kolsuz Pass; verbatimElevation: 1305 m; verbatimLatitude: 37.374; verbatimLongitude: 34.833; eventDate: 22-05-2008; individualCount: 2; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: C1C79A05-6629-5955-9AFF-FCB92B4A821C

Distribution

Algeria, Austria, Belgium, Bulgaria, China, Corsica, Croatia, Cyprus, Denmark, Estonia, France, Germany, Great Britain, Greece, Hungary, Iran, Italy, Latvia, Lithuania, Luxembourg, Malta, Moldova, Monaco, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russia, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tunisia, Türkiye, Ukraine and Uzbekistan (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2008, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Amasya, Balıkesir (Ayvalık), Eskişehir (Sivrihisar), Manisa (Warncke 1966); Van (Işık Mountain) (Warncke 1969); Ankara, Aydın, Erzurum, Muğla (Yatağan), Sivas (Hazır 2010, Hazır et al. 2014); Afyon (Sultandağı) (Güler et al. 2015); Niğde (this study) (Fig. 80 and Fig. 81A-C).

Flower records

Amaryllidaceae: *Allium* L., *Narcissus* L. **Apiaceae**: *Anthriscus* Pers., *Heracleum sphondylium* L. **Asteraceae**: *Achillea millefolium* L., *Anthemis* L., *Arctium minus* (Hill) Bernh., *Bellis perennis* L., *Centaurea nigra* L., *Cirsium* Mill., *Crepis* L., *Petasites* Mill., *Senecio* L., *Sonchus* L., *Taraxacum* F.H.Wigg., *Tussilago farfara* L. **Brassicaceae**: *Cardamine pratensis* L. **Caryophyllaceae**: *Stellaria* L. **Convolvulaceae**: *Convolvulus arvensis* L. **Cornaceae**: *Cornus sanguinea* L. **Cucurbitaceae**: *Bryonia dioica* Bojer **Fagaceae**: *Castanea sativa* Mill. **Lamiaceae**: *Glechoma hederacea* L., *Lamium*

album L. **Lauraceae**: *Laurus nobilis* L. **Malvaceae**: *Tilia* L. **Oleaceae**: *Ligustrum vulgare* L. **Onagraceae**: *Chamaenerion angustifolium* (L.) Scop. **Orchidaceae**: *Herminium* L. **Papaveraceae**: *Papaver* L. **Ranunculaceae**: *Caltha palustris* L., *Clematis vitalba* L., *Ranunculus ficaria* L., *Ranunculus* L. **Rosaceae**: *Filipendula ulmaria* (L.) Maxim., *Potentilla* L., *Prunus* L., *Pyrus* L., *Rubus fruticosus* agg. L., *Rubus* L. **Salicaceae**: *Salix* L., *Salix triandra* L. **Sapindaceae**: *Acer campestre* L., *Acer pseudoplatanus* L., *Acer* L. (Balfour et al. 2022); **Cistaceae**: *Cistus ladanifer* L. (Lanuza et al. 2025); **Brassicaceae**: *Nasturtium officinale* R.Br.

Figure 80. doi

Distribution of *A. thoracica* in the Mediterranean Region of Türkiye.

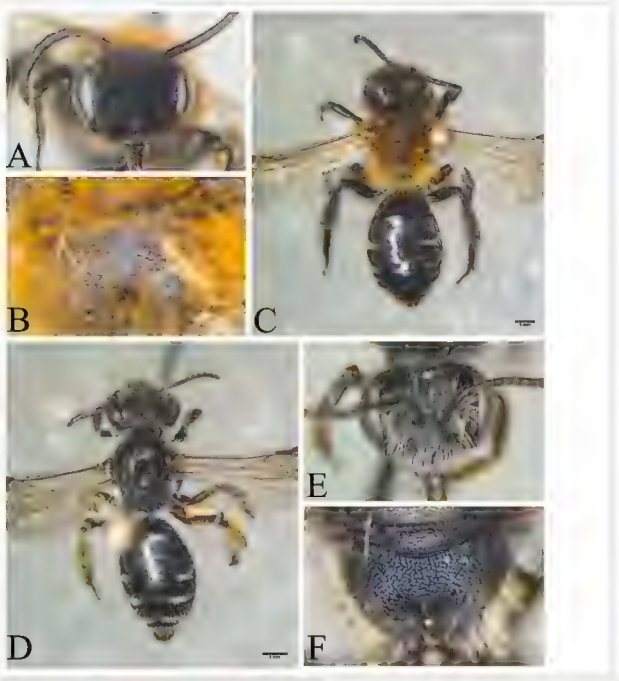

Figure 81. doi

Andrena thoracica, male. Head, frontal view (A); propodeum, dorsal view (B); habitus, dorsal view (C). *Andrena torda*, female. Habitus, dorsal view (D), head, frontal view (E), propodeum, dorsal view (F).

Andrena (*Cordandrena*) *torda* Warncke, 1965

Material

a. countryCode: TR; stateProvince: Muğla; locality: Datça road; verbatimElevation: 278 m; verbatimLatitude: 36.797; verbatimLongitude: 28.709; eventDate: 03-04-2009; individualCount: 9; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: A6D7F031-6350-5219-A943-88DD2B64E82E

Distribution

Cyprus, Greece, Iran, Iraq, Israel and West Bank, Lebanon and Türkiye (Gusenleitner and Schwarz 2002, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Konya (Beyşehir, Sarayönü) (Warncke 1966); Ankara, Aydın, (Beyşehir), Diyarbakır (Warncke 1974); Aydın (Hazır et al. 2014); Muğla (this study) (Fig. 81D-F and Fig. 82).

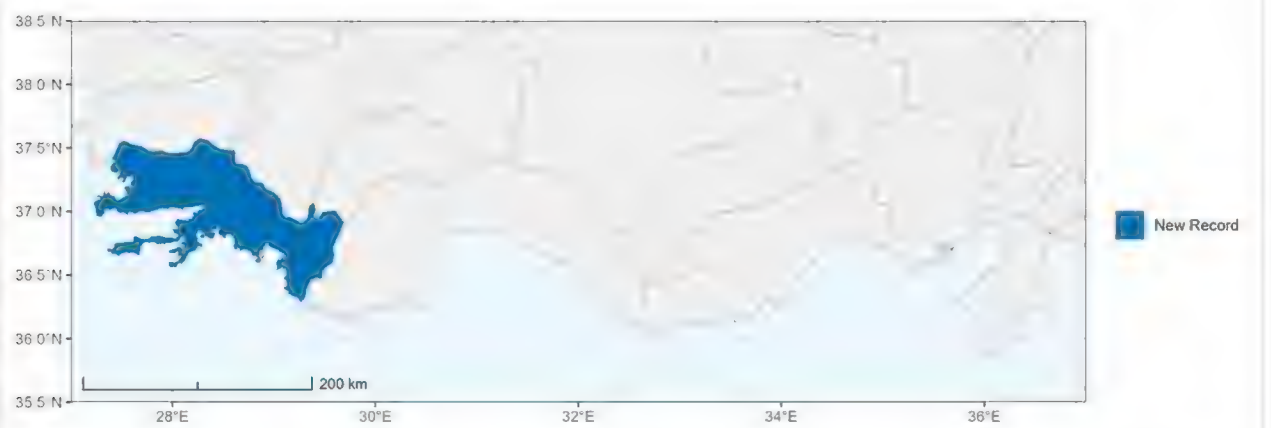

Figure 82. doi

Distribution of *A. torda* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Tordylium apulum* L. **Asteraceae**: *Anthemis chia* L.

Andrena (*Simandrena*) *transitoria* Morawitz, 1871

Material

a. countryCode: TR; stateProvince: Kahramanmaraş; locality: East of vineyard houses; verbatimElevation: 1288 m; verbatimLatitude: 37.634; verbatimLongitude: 36.957; eventDate: 01-07-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 44670737-31F5-533B-9DD0-36C9D43BD9AB

Distribution

Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Hungary, Iran, Israel and the West Bank, Italy, Jordan, Lebanon, Moldova, North Macedonia, Romania, Russia, Serbia, Slovakia, Syria, Turkmenistan, Türkiye and Ukraine (Warncke 1974, Gusenleitner and Schwarz 2002, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Ankara, Elazığ, Eskişehir, Hatay, Konya (Beyşehir), Nevşehir (Ürgüp) (Warncke 1966); Erzurum (Tortum), Kars (Kağızman) (Özbek 1976); Aksaray, Ankara, Antalya, Bolu, Burdur, Antep, Isparta, Kırşehir, Konya, Kütahya, Nevşehir (Hazır 2010, Hazır et al. 2014); Kahramanmaraş (this study) (Fig. 83).

Figure 83. doi

Distribution of *A. transitoria* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Centaurea virgata* Lam.

Andrena (*Truncandrena*) *truncatilabris* Morawitz, 1877

Materials

a. countryCode: TR; stateProvince: Burdur; locality: Antalya road, Korkuteli turn; verbatimElevation: 783 m; verbatimLatitude: 37.313; verbatimLongitude: 30.49; eventDate: 29-05-2009; individualCount: 4; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: EE9C4F66-7B76-5B15-A037-C5BA6F64EC3B

b. countryCode: TR; stateProvince: Mersin; locality: Elmalıkuzu village; verbatimElevation: 1381 m; verbatimLatitude: 36.423; verbatimLongitude: 33.05; eventDate: 07-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 75A2941A-A5FD-56B4-9ECF-BC452D3DC16A

c. countryCode: TR; stateProvince: Antalya; locality: Korkuteli-Finike road; verbatimElevation: 1346 m; verbatimLatitude: 36.949; verbatimLongitude: 30.131; eventDate: 10-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen;

identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 9D97F152-F711-58E8-AE4E-4CA5A72AD98C

Distribution

Albania, Algeria, Armenia, Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, France, Georgia, Greece, Hungary, Iran, Israel and the West Bank, Italy, Jordan, Lebanon, Montenegro, Morocco, North Macedonia, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Syria, Tunisia, Turkmenistan, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Adana, Amanos Mountains, Ankara, Balıkesir (Ayvalık), Konya, Mersin (Tarsus), Sakarya (Adapazarı) (Warncke 1966); Erzurum (Tortum, Oltu, Narman, İspir, Horasan), Kars, Muş (Özbek 1976); Adana, Aksaray, Amasya, Ankara, Antalya, Antep, Aydın, Balıkesir, Burdur, Çanakkale, Çorum, Hatay, Isparta, Maraş, Karaman, Kırşehir, Konya, Kütahya, Mersin, Muğla, Nevşehir, Sivas, Yozgat (Hazır 2010, Hazır et al. 2014); Antalya, Burdur, Mersin (this study) (Fig. 84).

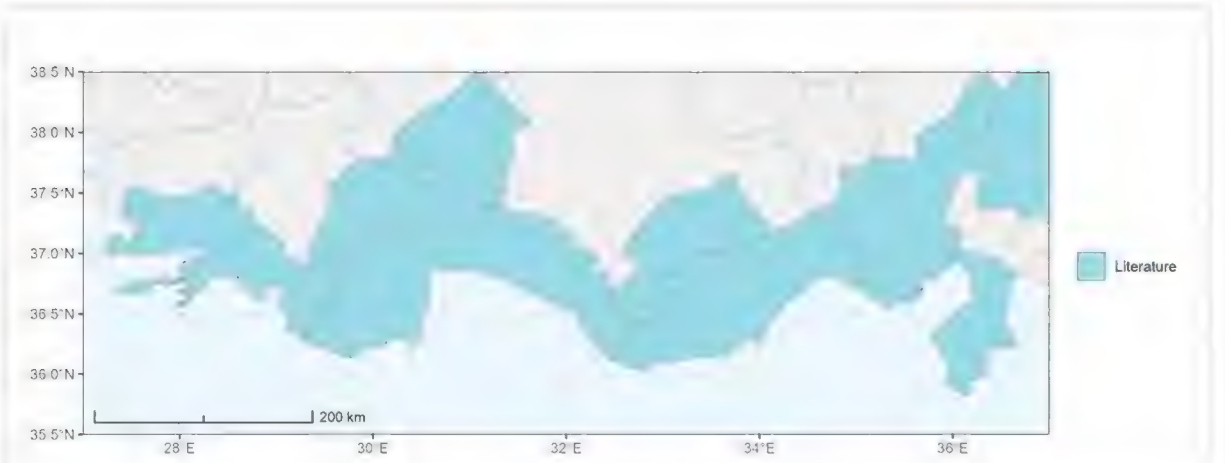

Figure 84. doi

Distribution of *A. truncatilabris* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Hirschfeldia incana* (L.) Lagr.-Foss., *Diplotaxis tenuifolia* (L.) DC. **Fabaceae**: *Medicago* L. **Geraniaceae**: *Erodium cicutarium* subsp. *cicutarium* (L.) L Hér.

Andrena (*Truncandrena*) *tscheki tritica* Warncke, 1965

Material

a. countryCode: TR; stateProvince: Hatay; county: Yayladağ; locality: Harbiye; verbatimElevation: 471 m; verbatimLatitude: 36.123; verbatimLongitude: 36.171; eventDate: 22-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen;

identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: C9FC2BB7-7585-5E7F-8E3A-898CAB1EC9A7

Distribution

Greece, Israel and the West Bank and Türkiye (Gusenleitner and Schwarz 2002).

Distribution in Türkiye: Bolkar Mountains (Warncke 1966); Karaman (Göktepe), Uşak (Elma Mountains) (Warncke 1974); Aydın (Hazır et al. 2014); Hatay (this study) (Fig. 85).

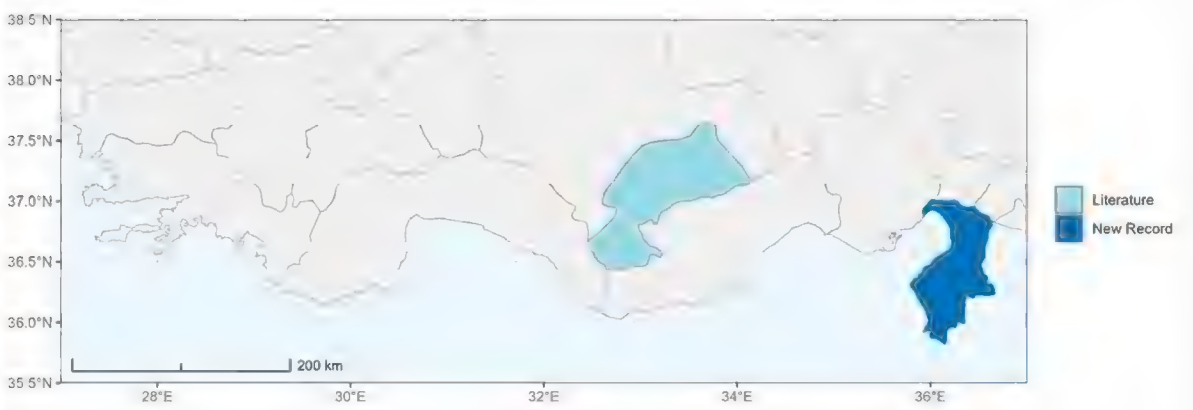

Figure 85. doi

Distribution of *A. tscheki* ssp. *tritica* in the Mediterranean Region of Türkiye.

Flower records

Lamiaceae: *Ballota saxatilis* subsp. *brachyodonta* (Boiss.) P.H.Davis & Doroszenko.

Andrena (*Holandrena*) *variabilis* Smith, 1853

Materials

a. countryCode: TR; stateProvince: Adana; county: Tufanbeyli; locality: 5 km from Pınarlar village; verbatimElevation: 1451 m; verbatimLatitude: 36.245; verbatimLongitude: 36.289; eventDate: 02-07-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 2DAE3764-A642-584E-BFEA-C2C3B0567F24

b. countryCode: TR; stateProvince: Mersin; locality: Mut-Gülnar road; verbatimElevation: 993 m; verbatimLatitude: 36.423; verbatimLongitude: 33.488; eventDate: 22-07-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 03CEA0D2-BEB7-54E5-A1E3-F5A604888A35

Distribution

Albania, Algeria, Armenia, Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, France, Georgia, Germany, Greece, Hungary, Iran, Israel and the

West Bank, Italy, Jordan, Lebanon, Moldova, Montenegro, Morocco, North Macedonia, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Switzerland, Syria, Turkmenistan, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2008, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Amanos Mountains, İstanbul (Warncke 1966); İzmir (Ensetepe) (Warncke 1969); Erzurum (İspir), Iğdır (Tuzluca) (Özbek 1976); Adana, Ankara, Konya, Sivas (Hazır 2010, Hazır et al. 2014); Adana, Mersin (this study) (Fig. 86).

Figure 86. doi

Distribution of *A. variabilis* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Cirsium arvense* (L.) Scop. **Fabaceae**: *Genista acanthoclada* DC. **Lamiaceae**: *Thymbra capitata* (L.) Cav. (Lanuza et al. 2025); **Apiaceae**: *Eryngium campestre* var. *virens* Link **Asteraceae**: *Echinops pungens* var. *pungens* Trautv. **Boraginaceae**: *Echium italicum* L.

Andrena (*Simandrena*) *vetula* Lepeletier, 1841

Material

a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Sarıkavak road; verbatimElevation: 665 m; verbatimLatitude: 36.565; verbatimLongitude: 33.63; eventDate: 25-04-2008; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 28B1C3E9-D074-551A-B46A-C6D8C442FD37

Distribution

Algeria, Azerbaijan, Croatia, Cyprus, Egypt, France, Georgia, Greece, Iran, Israel and the West Bank, Italy, Jordan, Lebanon, Libya, Morocco, Portugal, Russia, Spain, Syria, Tajikistan, Tunisia, Turkmenistan, Türkiye, Uzbekistan and Yemen (Gusenleitner

and Schwarz 2002, Wood and Monfared 2022, Wood et al. 2024, Ascher and Pickering 2025).

Distribution in Türkiye: Adana (Karataş), Mersin (Mut, Silifke, Tarsus) (Warncke 1966); Amasya, Ankara (Warncke 1974); Erzurum (Narman, Oltu, Tortum) (Özbek 1976); Adana, Ankara, Antep, Çorum, Hatay, Mersin, Osmaniye, Urfa (Hazır 2010, Hazır et al. 2014); Mersin (this study) (Fig. 87).

Figure 87. doi

Distribution of *A. vetula* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Diplotaxis tenuifolia* (L.) DC.

Andrena (*Ulandrena*) *westensis* Warncke, 1965

Materials

a. countryCode: TR; stateProvince: Muğla; county: Marmaris; locality: Özal Bay; verbatimElevation: 0 m; verbatimLatitude: 36.924; verbatimLongitude: 28.177; eventDate: 02-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: C95E5840-4E46-531B-BAAE-249CEFF142A8

b. countryCode: TR; stateProvince: Muğla; county: Marmaris; locality: Bördübet road; verbatimElevation: 195 m; verbatimLatitude: 36.857; verbatimLongitude: 28.126; eventDate: 04-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 8E0234F8-27AA-545B-B95F-C6B57758EB06

Distribution

Greece and Türkiye (Ascher and Pickering 2025).

Distribution in Türkiye: Adana (Gülek), Ankara, Antalya (Anamur, Finike), Çanakkale (Bigadiç), Manisa (Warncke 1974); Antalya, Aydın (Hazır 2010, Hazır et al. 2014); Muğla (this study) (Fig. 88).

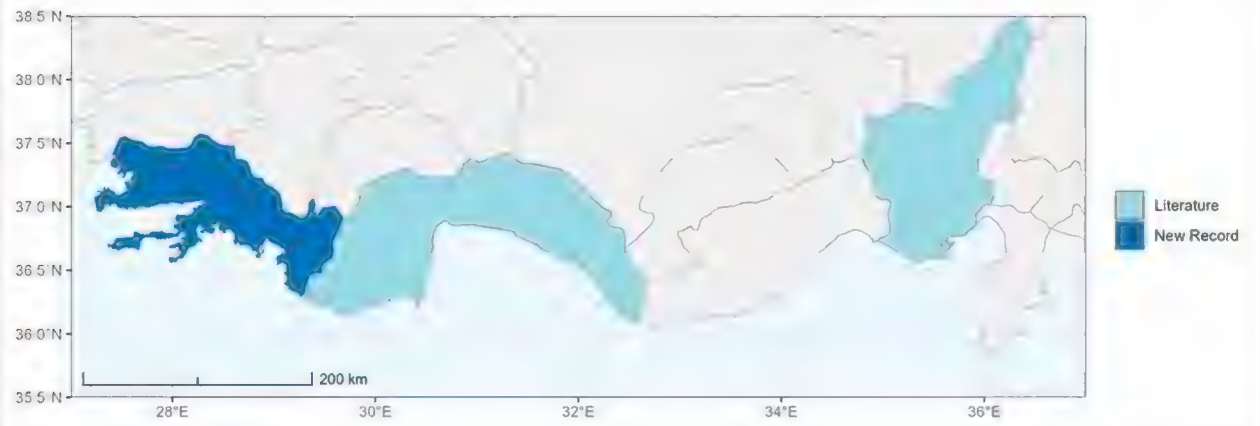

Figure 88. doi

Distribution of *A. westensis* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Crepis commutata* (Spreng.) Greuter, *Hypochaeris achyrophorus* L., *Leontodon tuberosus* L. **Cistaceae**: *Cistus salviifolius* L. (Lanuza et al. 2025); **Asteraceae**: *Crepis sancta* (L.) Bornm., *Crepis* L.

Andrena incertae sedis *wolfi* Gusenleitner & Scheuchl, 2000

Material

a. countryCode: TR; stateProvince: Hatay; locality: between Reyhanlı and Antakya; verbatimElevation: 85 m; verbatimLatitude: 36.252; verbatimLongitude: 36.519; eventDate: 21-03-2009; individualCount: 4; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 25D7A3B0-E7B2-5948-BB32-B06CB74F6AEE

Distribution

Israel and the West Bank, Jordan, Syria and Türkiye* (Gusenleitner and Schwarz 2002, Ghisbain et al. 2023).

Distribution in Türkiye: *Hatay (new record for Türkiye) (Fig. 89 and Fig. 90).

Flower records

Brassicaceae: *Erucaria microcarpa* Boiss. **Caryophyllaceae**: *Silene aegyptiaca* (L.) L.f. (Pisanty et al. 2016); **Brassicaceae**: *Ochthodium aegyptiacum* (L.) DC.

Analysis

The table below (Table 1) summarises 81 species of *Andrena* bees collected from the Mediterranean Region of Türkiye. It provides taxonomic classification, subgenus

information and authorship details. This compilation offers valuable data on the diversity and distribution of *Andrena* species in this biologically rich area.

Figure 89. doi

Distribution of *A. wolfi* in the Mediterranean Region of Türkiye.

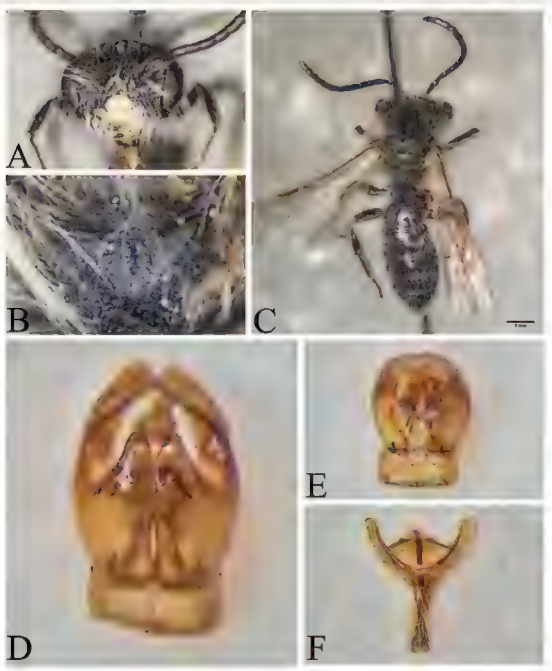

Figure 90. doi

Andrena wolfi, male. Head, frontal view (A); propodeum, dorsal view (B); habitus, dorsal view (C); genital capsule, dorsal view (D); genital capsule, ventral view (E); S7 and S8 (F).

Table 1.

Species List of *Andrena* Bees from the Turkish Mediterranean Area.

Subgenus	**Taxon priority**	**Author**
Aciandrena	*Andrena lamiana*	Warncke, 1965
Aenandrena	*Andrena bisulcata*	Morawitz, 1877
Brachyandrena	*Andrena colletiformis*	Morawitz, 1873
Campylogaster	*Andrena erberi*	Morawitz, 1871
Chlorandrena	*Andrena astica*	Warncke, 1967

Subgenus	Taxon priority	Author
	Andrena cinereophila	Warncke, 1965
	Andrena exquisita	Warncke, 1975
	Andrena humabilis	Warncke, 1965
	Andrena orientana	Warncke, 1965
	Andrena panurgimorpha	Mavromoustakis, 1957
Chrysandrena	*Andrena fulvago*	(Christ, 1791)
	Andrena glandaria	Warncke, 1975
	Andrena hesperia	Smith, 1853
Cordandrena	*Andrena cordialis*	Morawitz, 1877
	Andrena cypria	Pittioni, 1950
	Andrena torda	Warncke, 1965
Cryptandrena	*Andrena brumanensis*	Friese, 1899
Euandrena	*Andrena bicolor*	Fabricius, 1775
	Andrena pileata ssp. *canigica*	Warncke, 1975
	Andrena rufula	Schmiedeknecht, 1883
	Andrena symphyti	Schmiedeknecht, 1883
Fuscandrena	*Andrena iliaca*	Warncke, 1969
Hamandrena	*Andrena nasuta*	Giraud, 1863
Holandrena	*Andrena flavilabris*	Schenck, 1874
	Andrena forsterella	Osytshnjuk, 1978
	Andrena labialis	(Kirby, 1802)
	Andrena variabilis	Smith, 1853
Leimelissa	*Andrena fallax*	Eversmann, 1852
Melanapis	*Andrena fuscosa*	Erichson, 1835
Melandrena	*Andrena flavipes*	Panzer, 1799
	Andrena hungarica ssp. *macroura**	Warncke, 1975
	Andrena limata	Smith, 1853
	Andrena magna	Warncke, 1965
	Andrena nigroaenea	(Kirby, 1802)
	Andrena nitidemula	Scheuchl & Hazır, 2012
	Andrena pyropygia	Kreichbaumer, 1873
	Andrena thoracica	(Fabricius, 1775)
Micrandrena	*Andrena alfkenella*	Perkins, 1914
	Andrena alfkenelloides	Warncke, 1965
	Andrena alutacea	Stöckhert, 1942
	Andrena cedricola	Wood, 2020

Subgenus	Taxon priority	Author
	Andrena enslinella	Stöckhert, 1924
	Andrena floricola	Eversmann, 1852
	Andrena immaculata	Warncke, 1975
	Andrena minutula	(Kirby, 1802)
	Andrena oedicnema	Warncke, 1975
	Andrena rugothorace	Warncke, 1965
	Andrena rugulosa	Stöckhert, 1935
	Andrena spreta	Pérez, 1895
Nobandrena	*Andrena nobilis*	Morawitz, 1873
Notandrena	*Andrena aerinifrons*	Dours, 1873
	*Andrena purpureomicans**	Alfken, 1935
Opandrena	*Andrena schencki*	Morawitz, 1866
Plastandrena	*Andrena bimaculata*	(Kirby, 1802)
	Andrena pilipes	Fabricius, 1781
Poecilandrena	*Andrena crassana*	Warncke, 1965
	Andrena laticeps	Morawitz, 1877
Scitandrena	*Andrena scita*	Eversmann, 1852
Simandrena	*Andrena cinnamonea**	Warncke, 1975
	Andrena dorsata	(Kirby, 1802)
	Andrena gasparella	Patiny, 1998
	Andrena lepida	Schenck, 1861
	Andrena transitoria	Morawitz, 1871
	Andrena vetula	Lepeletier, 1841
Taeniandrena	*Andrena russula*	Lepeletier, 1841
	Andrena taedium	Wood, 2023
Truncandrena	*Andrena combusta*	Morawitz, 1876
	Andrena optata	Warncke, 1975
	Andrena rufomaculata	Friese, 1921
	Andrena schmiedeknechti	Magretti, 1883
	Andrena truncatilabris	Morawitz, 1877
	Andrena tscheki ssp. *tritica*	Warncke, 1965
Ulandrena	*Andrena abbreviata*	Dours, 1873
	Andrena fulvitarsis	Brullé, 1833
	Andrena isabellina	Warncke, 1969
	Andrena kriechbaumeri	Schmiedeknecht, 1883
	Andrena neocypriaca	Mavromoustakis, 1956

Subgenus	Taxon priority	Author
	Andrena westensis	Warncke, 1965
incertae sedis	*Andrena discordia*	Wood, 2023
	Andrena monacha	Warncke, 1965
	*Andrena wolfi***	Gusenleitner & Scheuchl, 2000

*: endemic to Türkiye (*Andrena hungarica macroura* Warncke, 1975 subspecies is endemic for Türkiye).

**: new record for Türkiye.

Biogeographical distribution

This study documented a total of 26 subgenera and 81 *Andrena* taxa in the Mediterranean Region of Türkiye. Amongst these taxa, *Andrena wolfi* was identified as a new record for the Turkish fauna. Subgeneric richness (Table 1) was highest in *Micrandrena* (12 species) and *Melandrena* (8 species), indicating that these groups contribute substantially to the regional *Andrena* diversity. Provincial distribution analyses revealed that *A. alfkenelloides*, *A. flavipes*, *A. fulvitarsis*, *A. labialis*, *A. minutula* and *A. truncatilabris* were the most widespread species across the Mediterranean provinces. The complete provincial distribution of all 81 species is presented in Table 2, while the number of newly-recorded species by province is detailed in Table 3.

Table 2.

Distribution of *Andrena* (Hymenoptera, Andrenidae) species in the provinces of the Turkish Mediterranean Region, with records compiled from literature and new collections.

***Andrena* species**	**Literature Records**	**Collection Records**
Andrena abbreviata	Adana, Antalya, Denizli, Mersin	Antalya, Mersin
Andrena aerinifrons		Hatay*
Andrena alfkenella	Adana	Hatay*
Andrena alfkenelloides	Adana, Antalya, Burdur, Denizli, Hatay, Mersin, Niğde, Osmaniye	Osmaniye
Andrena alutacea	Mersin	Mersin
Andrena astica	Adana, Kahramanmaraş	Adana, Hatay*
Andrena bicolor	Antalya	Hatay*
Andrena bimaculata	Adana	Hatay*
Andrena bisulcata	Adana, Hatay, Karaman, Mersin	Mersin
Andrena brumanensis	Adana, Antalya, Mersin	Antalya, Muğla*
Andrena cedricola		Niğde*

***Andrena* species**	**Literature Records**	**Collection Records**
Andrena cinereophila	Antalya, Kahramanmaraş, Mersin	Adana*, Hatay*, Mersin, Muğla*
Andrena cinnamonea	Antalya, Hatay, Mersin	Hatay
Andrena colletiformis	Adana, Antalya, Burdur, Denizli, Karaman	Mersin*
Andrena combusta	Mersin	Mersin
Andrena cordialis	Burdur, Hatay	Burdur
Andrena crassana	Antalya, Hatay, Mersin, Muğla	Burdur*
Andrena cypria	Burdur, Mersin, Niğde	Muğla*
Andrena discordia	Mersin	Mersin
Andrena dorsata	Adana, Antalya, Burdur, Denizli, Hatay, Isparta, Kahramanmaraş, Mersin	Niğde*
Andrena enslinella	Antalya, Isparta	Niğde*
Andrena erberi	Adana	Mersin*
Andrena exquisita	Kahramanmaraş	Hatay*
Andrena fallax	Antalya, Burdur, Mersin, Niğde	Antalya
Andrena flavilabris		Burdur*
Andrena flavipes	Adana, Antalya, Burdur, Denizli, Hatay, Kahramanmaraş, Karaman, Mersin, Muğla	Antalya, Hatay, Kahramanmaraş, Mersin, Niğde*
Andrena floricola	Adana, Denizli, Mersin	Mersin
Andrena forsterella	Adana, Antalya, Hatay, Mersin	Adana, Kahramanmaraş*, Muğla*
Andrena fulvago		Kahramanmaraş*
Andrena fulvitarsis	Adana, Antalya, Karaman, Mersin, Muğla, Niğde	Burdur*
Andrena fuscosa	Adana, Antalya	Adana, Antalya
Andrena gasparella		Antalya*
Andrena glandaria	Antalya, Muğla	Adana*, Hatay*, Mersin*, Muğla
Andrena hesperia	Adana, Antalya, Burdur, Kahramanmaraş, Mersin, Muğla	Adana, Hatay*
Andrena humabilis	Adana, Antalya, Kahramanmaraş, Mersin	Adana, Hatay*, Muğla*, Osmaniye*
Andrena hungarica		Muğla*
Andrena iliaca		Hatay*
Andrena immaculata		Antalya*
Andrena isabellina	Hatay	Hatay

***Andrena* species**	**Literature Records**	**Collection Records**
Andrena kriechbaumeri	Antalya, Mersin, Muğla	Mersin, Muğla
Andrena labialis	Antalya, Burdur, Denizli, Karaman, Mersin, Niğde	Adana*, Mersin
Andrena lamiana	Adana, Hatay, Mersin	Muğla*
Andrena laticeps	Mersin, Niğde	Niğde
Andrena lepida	Adana, Antalya, Burdur, Kahramanmaraş, Karaman	Hatay*
Andrena limata	Adana, Antalya, Burdur, Denizli, Muğla	Antalya
Andrena magna	Niğde	Denizli*
Andrena minutula		Antalya*, Muğla*, Osmaniye*
Andrena monacha	Adana, Antalya, Muğla, Osmaniye	Mersin*
Andrena nasuta	Karaman, Niğde	Mersin*
Andrena neocypriaca	Antalya, Hatay, Kahramanmaraş, Mersin, Muğla	Mersin
Andrena nigroaenea	Adana, Antalya, Muğla	Antalya
Andrena nitidemula	Burdur, Mersin	Mersin, Niğde*
Andrena nobilis	Adana, Burdur, Karaman, Mersin	Antalya*, Mersin
Andrena oedicnema	Antalya	Antalya, Mersin*
Andrena optata	Antalya, Burdur	Antalya
Andrena orientana	Adana, Antalya, Denizli, Hatay, Mersin	Muğla*
Andrena panurgimorpha	Antalya, Kahramanmaraş, Mersin, Niğde	Adana*
Andrena pileata ssp. *canigica*		Antalya*
Andrena pilipes	Adana, Antalya, Denizli, Mersin, Niğde	Antalya
Andrena purpureomicans	Adana, Burdur, Hatay, Niğde	Antalya*
Andrena pyropygia	Mersin	Hatay*, Karaman*
Andrena rufomaculata	Hatay	Hatay
Andrena rufula	Antalya	Hatay*
Andrena rugothorace	Burdur, Karaman, Niğde	Adana*, Antalya*, Muğla*
Andrena rugulosa		Niğde*
Andrena russula	Antalya, Mersin	Muğla*
Andrena schencki	Antalya, Mersin	Muğla*

***Andrena* species**	**Literature Records**	**Collection Records**
Andrena schmiedeknechti	Antalya, Karaman, Mersin, Niğde	Mersin
Andrena scita	Antalya, Burdur, Denizli, Karaman, Mersin	Karaman
Andrena spreta	Adana, Antalya, Mersin, Osmaniye	Antalya, Hatay*, Mersin
Andrena symphyti	Adana, Hatay, Kahramanmaraş, Mersin	Niğde*
Andrena taedium	Adana, Muğla, Niğde	Antalya*, Muğla, Niğde
Andrena thoracica	Muğla	Niğde*
Andrena torda		Muğla*
Andrena transitoria	Antalya, Burdur, Hatay, Isparta	Kahramanmaraş*
Andrena truncatilabris	Adana, Antalya, Burdur, Hatay, Isparta, Kahramanmaraş, Karaman, Mersin, Muğla	Antalya, Burdur, Mersin
Andrena tscheki ssp. *tritica*	Karaman	Hatay*
Andrena variabilis	Adana	Adana, Mersin*
Andrena vetula	Adana, Hatay, Mersin, Osmaniye	Mersin
Andrena westensis	Adana, Antalya	Muğla*
Andrena wolfi		Hatay*

*New provincial record.

Table 3.

Number of newly-recorded species by province in the Mediterranean Region of Türkiye.

Province	**New Records**
Hatay	17
Muğla	14
Antalya	8
Niğde	8
Mersin	7
Adana	5
Burdur	3
Kahramanmaraş	3
Osmaniye	2
Karaman	1
Denizli	1

Discussion

Situated at the confluence of three major> biogeographical realms (Mediterranean, Euro-Siberian and Irano-Turanian), Türkiye supports an exceptionally rich apifauna. However, despite this significant species diversity, knowledge regarding the distribution and systematics of the local *Andrena* fauna remains fragmented and comprehensive faunistic inventories are notably lacking (Güler 2011, Hazır et al. 2014, Güler et al. 2014, Dikmen 2018, Wood 2023a, Wood 2023b). In this context, the present study provides a significant contribution to filling this gap by documenting 81 *Andrena* taxa in the Mediterranean Region, a critical biodiversity hotspot. Amongst the sampled locations, species were observed to be most concentrated in the provinces of Hatay, Muğla and Antalya (Table 3). Our analyses of provincial distribution patterns identified *A. alfkenelloides*, *A. flavipes*, *A. fulvitarsis*, *A. labialis*, *A. minutula* and *A. truncatilabris* as the most widespread taxa across the Mediterranean Region. This faunistic composition is highly consistent with previous large-scale studies of Turkish *Andrena* fauna (e.g. Hazır (2010), Hazır et al. (2014)), particularly with regard to the dominance of *A. truncatilabris*, *A. labialis* and *A. flavipes*.

The ubiquity of these species is likely due to their broad ecological plasticity and life-history traits. For instance, *A. truncatilabris*, reported by Hazır (2010) as the most widespread species in Türkiye with a preference for steppe habitats, clearly maintains a strong presence in the Mediterranean zone, indicating a high tolerance for varying climatic conditions. Similarly, the extensive distribution of *A. flavipes* is well supported by literature: Warncke (1974) described it as ubiquitous and Özbek (1975, 1978) linked its success to its bivoltine phenology (two generations per year) and polylectic foraging behaviour (Hazır 2010). These traits enable *A. flavipes* to exploit a diverse array of floral resources over a prolonged flight period, facilitating its colonisation of various habitats, including agricultural landscapes.

An analysis of the recorded faunal composition reveals a relatively low rate of endemism; only three of the 81 taxa (*Andrena hungarica* ssp. *macroura*, *A. purpureomicans* and *A. cinnamonea*) are known endemics (approx. 3.7%). Regional distribution analysis further supports this pattern. Approximately 9% (7 taxa) of the studied fauna are restricted to the Mediterranean Region within the scope of these data. However, the vast majority (91%) are also recorded in other geographical regions of Turkey. This low level of endemicity suggests that the regional fauna is not highly isolated, but is rather dominated by species with wider geographical ranges; this contrasts with the pattern seen on the main Anatolian Plateau and in mountains areas (Warncke 1974).

Amongst the endemic taxa, *Andrena hungarica* ssp. *macroura* is of particular interest due to its complex taxonomy and distribution. Recent assessments show that the nominate form, *Andrena hungarica* Friese, 1887, is restricted to the Pannonian Basin. Furthermore, *A. h.* ssp. *khursiensis* Osytshnjuk, 1994 is now considered a junior synonym of *A. quadimaculata* Friese, 1921 (Wood and Bossert 2025). As a result, *A. h.* ssp. *macroura* remains the only valid lineage of this group, endemic to Anatolia. Previously, literature

described this subspecies as a steppe element found only in the high-altitude regions of Central and Eastern Anatolia (Warncke 1974). Therefore, its discovery in a coastal Mediterranean locality (Muğla) is surprising, as this habitat differs significantly from its typical range. Despite this difference in climate, the morphology of our specimens matches the diagnostic description of the subspecies perfectly, confirming the identification (Fig. 37D-F). We hypothesise that this isolated coastal population may be a glacial relict that remained after populations moved to lower altitudes during the cooler periods of the Pleistocene. Alternatively, this finding suggests that *Andrena hungarica* ssp. *macroura* has higher ecological plasticity than previously thought. Future studies using molecular data and ecological modelling are needed to determine if this population is a separate cryptic lineage or simply shows the species' ability to adapt.

The most notable faunistic outcome of this study is the first record of *Andrena wolfi* from Türkiye. The identification is unequivocally supported by the morphology of the collected male specimens; specifically, the structure of the genital capsule and the hidden sterna (S7 and S8) exhibit complete congruence with the diagnostic characters described and illustrated by Pisanty et al. (2016) (Fig. 90). Historically, the known distribution of *A. wolfi* has been concentrated in the Levant (Gusenleitner and Schwarz 2002, Ghisbain et al. 2023). Consequently, the discovery of *Andrena wolfi* in southern Türkiye suggests two plausible scenarios: (1) the species is undergoing a natural northward range expansion, potentially driven by current climatic dynamics or (2) it was previously overlooked due to insufficient sampling intensity in suitable habitats during earlier faunistic surveys.

Beyond the distributional patterns, ecological data obtained from field surveys elucidate the critical floral associations of the regional *Andrena* community. Our results exhibit a strong concordance with literature records regarding the dominance of key plant families; however, slight variations in preference hierarchies were observed. While aggregated literature data generally position Asteraceae (hosting 25 species) as the primary pollen source, followed by Brassicaceae (22 species) and Fabaceae (16 species), our field observations revealed a slight dominance of Brassicaceae, which supported the highest diversity of *Andrena* taxa (38 species), followed closely by Asteraceae (35 species). Whereas published records most frequently identify *Crepis* (14 species), *Brassica* (11 species) and *Senecio* (10 species) as key foraging genera for *Andrena*, our field observations reveal a different pattern of floral use. In our dataset, the genera *Crepis* (18 species), *Sisymbrium* (9 species) and *Hirschfeldia* (8 species) were recorded as the most frequently visited. Notably, *Crepis* stands out as a consistently important floral resource, ranking as the top genus in both literature-based records and our field data. Additionally, the dietary classifications and specific floral specialisations of the documented *Andrena* species are summarised in Table 4.

Table 4.

Host plant use and dietary classification for selected *Andrena* species from the Mediterranean Region of Turkey. Much unpublished data will be published in the near future as part of a revision of the *Andrena* of the southern Balkans (Wood 2026).

Species	Host range	Literature
Aciandrena		
A. lamiana Warncke	Probably broadly oligolectic on Brassicaceae	Wood, *unpublished data*
Aenandrena		
A. bisulcata Morawitz	Unclear, strongly associated with Brassicaceae	
Brachyandrena		
A. colletiformis Morawitz	Unclear, probably polylectic with a strong preference for Apiaceae	Wood (2023a); Wood, *unpublished data*
Campylogaster		
A. erberi Morawitz	Unknown	
Chlorandrena		
A. astica Warncke	Broadly oligolectic (Asteraceae: Cichorioideae)	Wood, *unpublished data*; inferred from phylogenetic position
A. cinereophila Warncke	Broadly oligolectic (Asteraceae: Cichorioideae)	Wood, *unpublished data*
A. exquisita Warncke	Broadly oligolectic (Asteraceae: Cichorioideae)	Wood, *unpublished data*
A. humabilis Warncke	Broadly oligolectic (Asteraceae: Cichorioideae)	Wood, *unpublished data*
A. orientana Warncke	Broadly oligolectic (Asteraceae: Cichorioideae)	Wood, *unpublished data*
A. panurgimorpha Mavromoustakis	Broadly oligolectic (Asteraceae: Cichorioideae)	Wood, *unpublished data*
Chrysandrena		
A. fulvago Christ	Broadly oligolectic (Asteraceae: Cichorioideae)	Westrich (1989)
A. glandaria Warncke	Broadly oligolectic (Asteraceae: Cichorioideae)	Inferred from phylogenetic position
A. hesperia Smith	Broadly oligolectic (Asteraceae: Cichorioideae)	Wood (2023a)
Cordandrena		
A. cordialis Morawitz	Polylectic	Wood, *unpublished data*
A. cypria Pittioni	Probably polylectic	Wood, *unpublished data*
A. torda Warncke	Probably polylectic	Wood, *unpublished data*
Cryptandrena		

Species	Host range	Literature
A. brumanensis Friese	Possibly broadly oligolectic (Fabaceae)	Wood, *unpublished data*
Euandrena		
A. bicolor Fabricius	Polylectic	Westrich (1989)
A. pileate ssp. *canigica* Warncke	Polylectic	Wood, *unpublished data*
A. rufula Schmiedeknecht	Polylectic	Westrich (1989)
A. symphyti Schmiedeknecht	Broadly oligolectic (Boraginaceae)	Westrich (1989)
Fuscandrena		
A. iliaca Warncke	Unknown, possibly broadly oligolectic on Brassicaceae	Wood, *unpublished data*
Hamandrena		
A. nasuta Giraud	Narrowly oligolectic on *Anchusa* (Boraginaceae)	Westrich (1989)
Holandrena		
A. flavilabris Schenck	Polylectic	Manderey et al. (2008)
A. forsterella Osytshnjuk	Polylectic	Wood, *unpublished data*
A. labialis Kirby	Polylectic with a strong preference (Fabaceae)	Wood and Roberts (2017)
A. variabilis Smith	Polylectic	Wood, *unpublished data*
Leimelissa		
A. fallax Eversmann	Narrowly oligolectic on *Onobrychis* (Fabaceae)	Wood, *unpublished data*
Melanapis		
A. fuscosa Erichson	Polylectic	Wood (2023a)
Melandrena		
A. flavipes Panzer	Polylectic	Westrich (1989), Wood and Roberts (2017)
A. hungarica ssp. macroura Warncke	Unknown, probably polylectic	Inferred from phylogenetic position
A. limata Smith	Polylectic	Westrich 1989
A. magna Warncke	Unknown, probably polylectic	Inferred from phylogenetic position
A. nigroaenea Kirby	Polylectic	Westrich (1989), Wood and Roberts (2017)
A. nitidemula Scheuchl & Hazir	Unknown, probably polylectic	Inferred from phylogenetic position
A. pyropygia Kreichbaumer	Unknown, probably polylectic	Inferred from phylogenetic position
A. thoracica Fabricius	Polylectic	Westrich (1989), Wood and Roberts (2017)
Micrandrena		

Species	Host range	Literature
A. alfkenella Perkins	Polylectic	Westrich (1989); Wood, *unpublished data*
A. alfkenelloides Warncke	Unknown	
A. alutacea Stöckhert	Broadly oligolectic on Apiaceae	Schmid-Egger and Scheuchl (1997)
A. cedricola Wood		
A. enslinella Stöckhert	Possibly broadly oligolectic (Brassicaceae)	Schmid-Egger and Scheuchl (1997)
A. floricola Eversmann	Broadly oligolectic (Brassicaceae)	Westrich (1989)
A. immaculata Warncke	Unknown	
A. minutula Kirby	Polylectic	Westrich (1989)
A. oedicnema Warncke	Unknown	
A. rugothorace Warncke	Broadly oligolectic (Asteraceae: Asteroideae)	Wood, *unpublished data*
A. rugulosa Stöckhert	Polylectic	Westrich (1989)
A. spreta Pérez	Polylectic with a strong preference (Brassicaceae)	Wood (2023a)
Nobandrena		
A. nobilis Morawitz	Broadly oligolectic (Brassicaceae)	Schmid-Egger and Scheuchl (1997)
Notandrena		
A. aerinifrons Dours	Broadly oligolectic (Brassicaceae)	Wood (2023a)
A. purpureomicans Alfken	Probably broadly oligolectic (Brassicaceae)	Inferred from phylogenetic position
Opandrena		
A. schencki Morawitz	Polylectic	Westrich (1989)
Plastandrena		
A. bimaculata Kirby	Polylectic	Westrich (1989)
A. pilipes Fabricius	Polylectic	Westrich (1989)
Poecilandrena		
A. crassana Warncke	Narrowly oligolectic on *Legousia* (Campanulaceae)	Wood, *unpublished data*
A. laticeps Morawitz	Unknown	
Scitandrena		
A. scita Eversmann	Polylectic	Wood, *unpublished data*
Simrandrena		
A. cinnamonea Warncke	Unknown	
A. dorsata Kirby	Polylectic	Westrich (1989), Wood and Roberts (2017)
A. gasparella Patiny	Unknown	
A. lepida Schenck	Polylectic	Westrich (1989)
A. transitoria Morawitz	Unknown	

Species	Host range	Literature
A. vetula Lepeletier	Broadly oligolectic (Brassicaceae)	Wood (2023a)
Taeniandrena		
A. russula Lepeletier	Broadly oligolectic (Fabaceae)	Westrich (1989)
A. taedium Wood	Unknown, but certainly associated with Fabaceae	
Truncandrena		
A. combusta Morawitz	Probably broadly oligolectic (Brassicaceae)	Inferred from phylogenetic position
A. optata Warncke	Broadly oligolectic (Brassicaceae)	Wood, *unpublished data*
A. rufomaculata Friese	Probably broadly oligolectic (Brassicaceae)	Inferred from phylogenetic position
A. schmiedeknechti Magretti	Broadly oligolectic (Brassicaceae)	Wood, *unpublished data*
A. truncatilabris Morawitz	Broadly oligolectic (Brassicaceae)	Schmid-Egger and Scheuchl (1997)
A. tscheki ssp. *tritica* Warncke	Broadly oligolectic (Brassicaceae)	Westrich (1989); Wood, *unpublished data*
Ulandrena		
A. abbreviata Dours	Broadly oligolectic (Asteraceae; Asteroideae)	Wood, *unpublished data*
A. fulvitarsis Brullé	Broadly oligolectic (Asteraceae; Asteroideae)	Wood, *unpublished data*
A. isabellina Warncke	Broadly oligolectic (Asteraceae; Cichorioideae)	Wood, *unpublished data*
A. kriechbaumeri Schmiedeknecht	Broadly oligolectic (Asteraceae; Cichorioideae)	Wood, *unpublished data*
A. neocypriaca Mavromoustakis	Broadly oligolectic (Asteraceae; Asteroideae)	Wood, *unpublished data*
A. westensis Warncke	Broadly oligolectic (Asteraceae; Cichorioideae)	Wood, *unpublished data*
incertae sedis		
A. discordia Wood	Unknown	
A. monacha Warncke	Unknown	
A. wolfi Gusenleitner & Scheuchl	Unknown	

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